J. A. McKAY.

ELECTRICAL FITTING CONNECTION.

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1,300,286.

Patented Apr. 15, 1919.

Fig. 1.

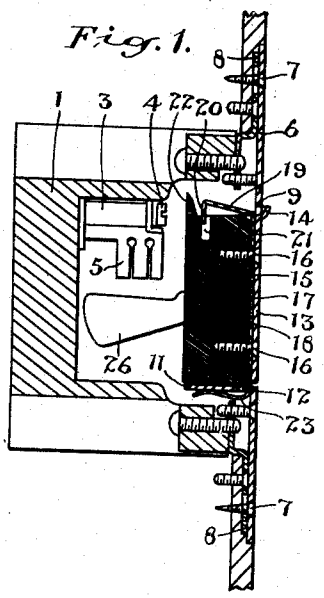


Fig. 4.

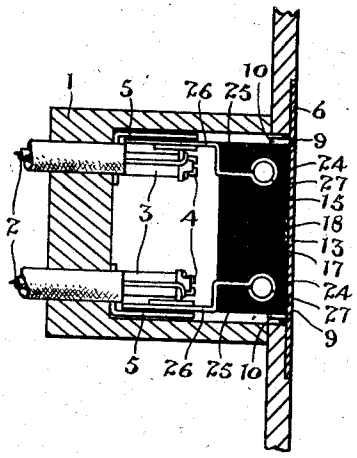


Fig. 2.

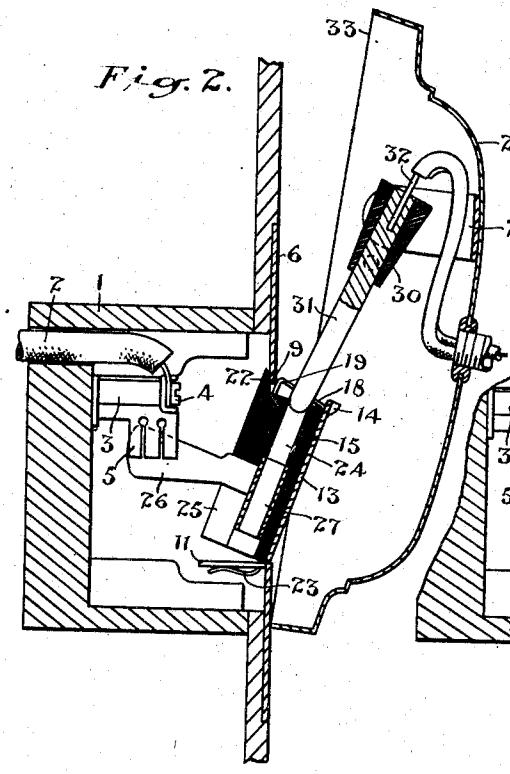
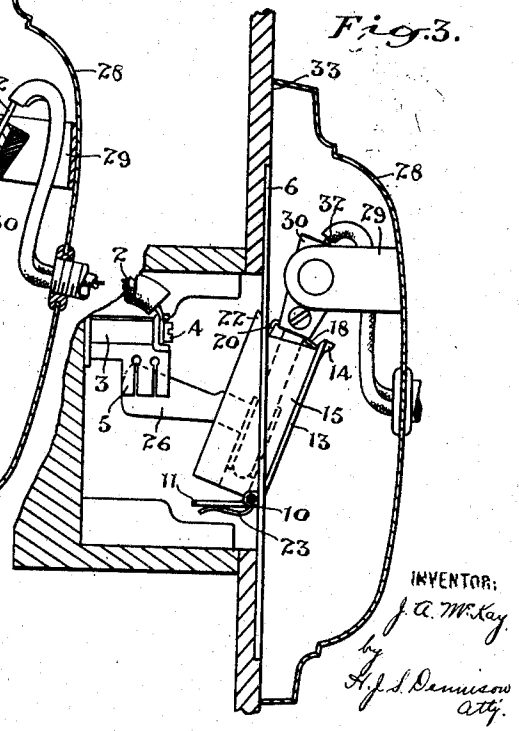


Fig. 3.



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ELECTRICAL-FITTING CONNECTION.

1,300,286. Specification of Letters Patent. Patented Apr. 15, 1919.

Application filed July 1, 1918. Serial No. 242,916.

To all whom it may concern:

Be it known that I, JOHN ANDREW McKAY, a subject of the King of Great Britain, and resident of the city of Toronto, county of York, Province of Ontario, in the Dominion of Canada, have invented certain new and useful Improvements in Electrical-Fitting Connections, described in the following specification and illustrated in the accompanying drawings, that form part of the same.

The principal objects of this invention are, to devise an improved means for detachably securing electrical fittings so that the fittings may be wired separately and attached or detached instantaneously and the fitting held firmly in place.

A further and important object is to devise a form of wall fixture which will be permanently secured and will present a flush outer face when not in use and in which the electrical connections for connecting with the fixture or attachment will be electrically disconnected when not in use.

The principal feature of the invention consists in certain improvements over the structure disclosed in my pending application No. 197,455, whereby the pivotal socket connection to which the fitting is secured is electrically connected with the feed wires upon being swung outwardly on its pivot and whereby said pivotal member is spring held in its closed position when not in use and locked in its open position to receive the fitting.

In the drawings, Figure 1 is a vertical mid-sectional view of the wall fitting shown in the closed position.

Fig. 2 is a vertical sectional view showing the pivotal member in the open position ready to receive the fixture connection, the fixture being shown in the act of being placed therein.

Fig. 3 is a vertical sectional view similar to Fig. 2 showing the fitting in position.

Fig. 4 is a horizontal sectional view showing the wall fixture member in its closed position.

In the installation of electrical fixtures it is extremely desirable to reduce the element of possible short circuits to the minimum and to thoroughly insulate the various connections with a high factor of safety. In order to accomplish this result, I utilize an insulating block 1 which is placed within the usual metal wall box if necessary and the lead wires 2 extend through openings from the back.

Contact members 3 are rigidly secured in the insulating block and connected to the lead wires 2 by the binding screws 4. These contact members are formed with downwardly extending knife switch socket blades 5. A face plate 6 is secured by suitable screws 7 to the plate 8 connected to the insulating block and is provided with a central rectangular orifice 9.

Pivot lugs 10 are struck up from the plate 8 on each side of the bottom of the orifice 9 and a lug 11 extends inwardly from the bottom side centrally of the width thereof, said lug having a transverse slot 12 at the inner edge of the plate.

A plate 13 is formed with pivot pins at the bottom corners to fit into the pivot lugs 10 and when so supported the said plate 13 closes the orifice 9 and is provided with a finger lug 14 at the top to enable its being withdrawn or swung outwardly on its pivot.

An insulating block 15 is secured to the back of the pivot 13 by the screws 16. This block is formed with a longitudinal groove 17 in its forward side in which a strip of spring metal 18 is secured, being held in place by the screws 16 which extend therethrough. The upper end 19 of the spring strip 18 is bent inwardly and formed with an upward slope and its inner end 20 is turned downwardly to fit into a recess 21. The sloping end of the spring strip 19 is adapted to engage the plate 6 at the upper edge of the orifice 9 and the end 20 engages the outer face of the plate when it has been swung to its outward limit, thus holding the plate and block securely in an outwardly inclined position.

Stop lugs 22 are formed upon the block 15 to engage the inner side of the face plate when the pivotal member is swung outwardly.

The lower end 23 of the strip 18 extends through the transverse slot 12 in the lug 11 and engages the underside of said lug, being sprung into position so that the pivotal member is held tightly closed in the position shown in Fig. 1 but allowing the pivotal member to be swung outwardly to the position shown in Fig. 2. The insulating block 15 is formed with a pair of longitudinal orifices 24 of circular cross section and narrow slots 25 open outwardly through the back of these orifices.

Switch blades 26 are formed of sheet metal having the tubular ends 27 adapted to fit tightly into the lower enlarged ends of the orifices 24 so that the blade portions extend outwardly through the slots 25, said blades being arranged in alinement with the switch contacts 5 and adapted to engage therewith when the pivot plate 13 is swung to its outward position and to disengage therefrom when said plate is swung to the closed position.

The fixture 28 is provided with a bracket 29 between the ends of which is pivotally supported a block 30 of insulating material. A pair of connector pins 31 are secured in this block and are spaced apart to conform to the spacing of the orifices 25 in the block 15 and are adapted to be inserted thereinto and to form an electrical connection with the tubular ends of the switch blades 26. The upper ends of the pins are suitably bored to receive the ends of the flexible wire connections 32 of the fixture. The pivot support of the block 30 is well within the outer rim 33 of the fixture so that when the pins are inserted into the orifices in the block 15 and pressed downwardly the taper will draw the fixture inwardly until the edge of the rim 33 fits snugly against the wall and is wedged tightly thereagainst.

When the fixture is thus placed in position it is held securely against accidental removal but it may be removed without damaging the wall or without the cutting of wires, by simply forcing it upwardly to withdraw the pins from the block.

In the use of this device the block 1 is secured in place and the leads are connected up to the binding screws. The spring strip 18 engaging the lug 11 holds the block 15 in the closed position and the switch blades 26 out of contact with the switch blades 5.

When it is desired to attach a fixture or to connect any electrical attachment it is merely necessary to swing the plate 13 outwardly on its pivot until the upper end 19 of the spring strip springs into engagement with the face plate and locks the block 15 in the inclined position. The spring 19 cooperates with the stop lugs 22 to hold the block firmly in position. The forward swinging of the block on its pivot swings the switch blades 26 upwardly to engage the switch blades 5 in the fixture, thus electrically connecting the tubular contacts with the leads.

The connector pins 31 of the fixture are swung outwardly on their pivots and inserted into the orifices 24. The angularity of the block 15 and the pivotal connection of the pins with the fixture allow of the pins being guided into place without difficulty and when started into the holes in the block 15 it is merely necessary to push down on the fixture until it is drawn tightly against the wall through the angular arrangement of the block.

A fixture such as described eliminates all the uncertain conditions of wiring of fixtures into place and allows of their being readily removed and replaced at will and without damage, either to the wiring or to the wall.

It will also be seen that the leads are firmly and solidly connected to the stationary binding screws and that there is no connection with these binding screws until the block 15 is swung open and as the contact sockets are embedded well within the block there is no possibility of short circuits being made.

What I claim as my invention is:—

1. An electrical fitting connection comprising a fixed member having electrical contacts, a member pivotally supported from said fixed member and having a pair of electrical contacts adapted to engage said fixed contacts, a pair of contacts pivotally mounted in the fitting and electrically connected and adapted to engage the contacts in said pivotal member.

2. An electrical fitting connection comprising an insulating member having a pair of fixed electrical contacts, a member pivotally supported and having a pair of electrical contacts adapted to engage with said fixed contacts, spring means for holding said pivotal member with its contacts clear of the fixed contacts, means for locking said pivotal member with its contacts in engagement with said fixed contacts, and a fixture having pivotal electrical contacts adapted to engage the contacts in the aforesaid pivotal member.

3. An electrical fitting connection comprising an insulating member having a pair of fixed electrical contacts, a plate secured to said insulating member having an opening therein, pivot lugs arranged each side of the opening in said plate, a plate pivotally supported from said pivot lugs and closing said opening, an insulating block secured to said pivotal plate having socket holes therein, electrical contacts arranged in said socket holes and adapted to engage the fixed contacts in said insulating member, a spring member secured to said pivotal member and adapted to hold said plate in its closed position, a spring latch arranged at the top of said pivotal member to engage the edge of the opening in the plate to hold it open, a fixture, and pivotal contact pins arranged within said fixture and adapted to enter the openings in the pivotal member secured in said plate.

4. An electrical fitting connection comprising an insulating block having a pair of fixed contacts formed with spring switch fingers, a block of insulating material pivotally supported at the forward side of the

aforesaid block and having a pair of orifices extending longitudinally therethrough and slits extending outwardly from the back of said orifices, sheet metal switch blades adapted to engage the fixed switch contacts and extending through the slit portions of said pivotal block and having tubular inner ends fitting in said longitudinal orifices, means for locking the pivotal block in an open inclined position, a fixture, an insulating block pivotally supported in said fixture and a pair of contact members wired to the fixture and adapted to enter the orifices in said block.

5. An electrical fitting connection comprising, an insulating member having a pair of fixed electrical contacts, a face plate secured to said member having an opening therein, a member pivotally supported and adapted to close the opening in said face plate, a pair of electrical contacts carried in said pivotal member and adapted to connect with said fixed contacts, a strip of spring material secured in said pivotal member and having its upper end spring engaging the upper edge of the opening in the face plate and forming a lug, the lower end of said spring strip being held in fixed engagement with the face plate to spring hold the pivotal member to the closed position.

6. An electrical fitting connection, comprising, an insulating member having a pair of fixed electrical contacts, a face plate secured to said insulating member having an opening therein and a rigid lug extending inwardly from the bottom edge of said opening, said lug having a slot therethrough, a member pivotally supported from said face plate and adapted to close the opening therein and formed with a longitudinal groove in its forward side, a strip of spring material secured in the groove in said pivotal member having its lower end extending through the slot in the fixed lug of the face plate and engaging the underside of the lug and spring holding the pivotal member in the closed position, the upper end of said spring strip being turned inwardly and forming a spring latch to engage the upper edge of the opening through the face plate, and stop lugs arranged upon the pivotal member to engage the inner side of the face plate and to limit the outward movement to the pivotal member.

JOHN ANDREW McKAY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."