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CONDUIT SYSTEM FOR STRUCTURES HAVING MASONRY
WALLS AND DOOR FRAME

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2 Sheets-Sheet 1

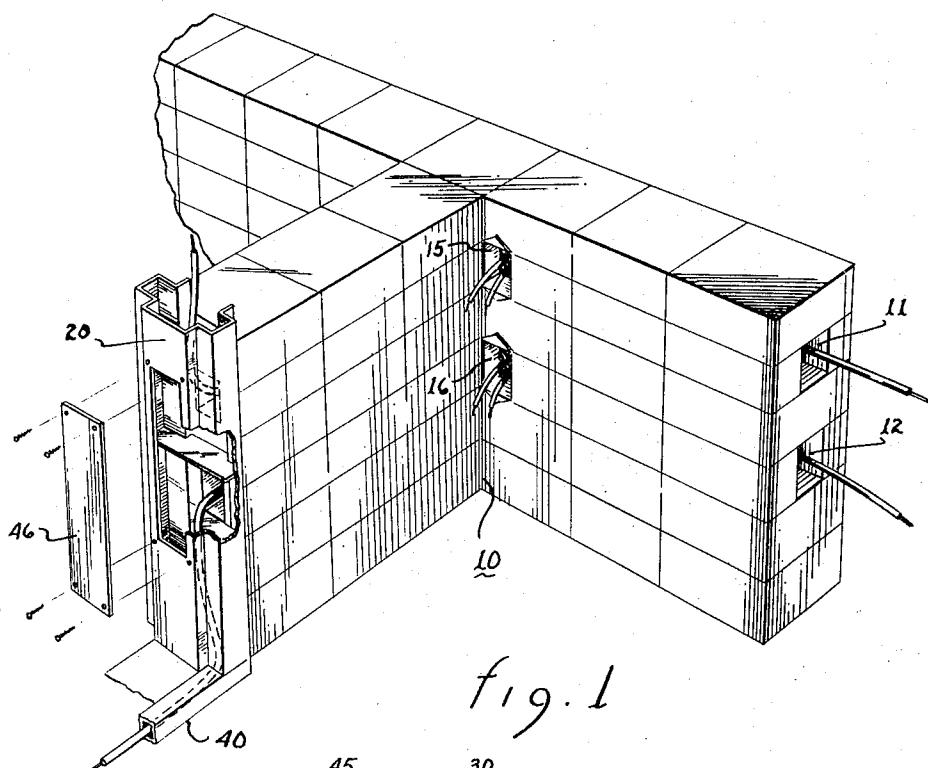


Fig. 1

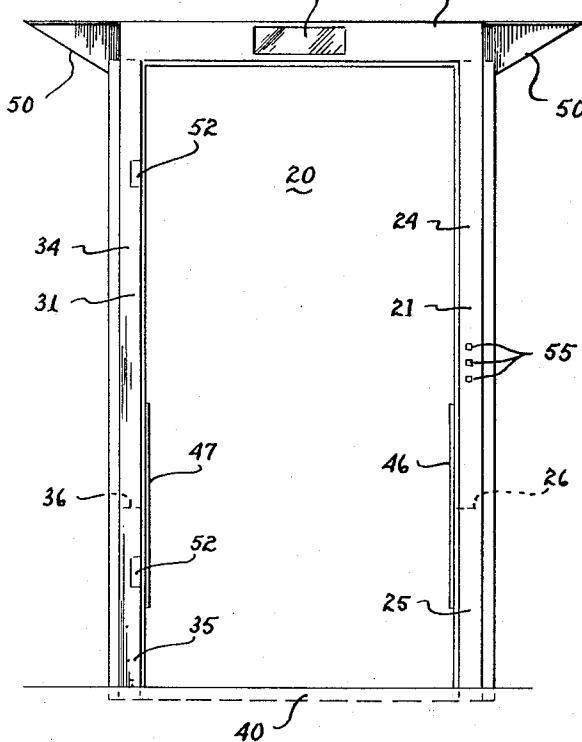


Fig. 2

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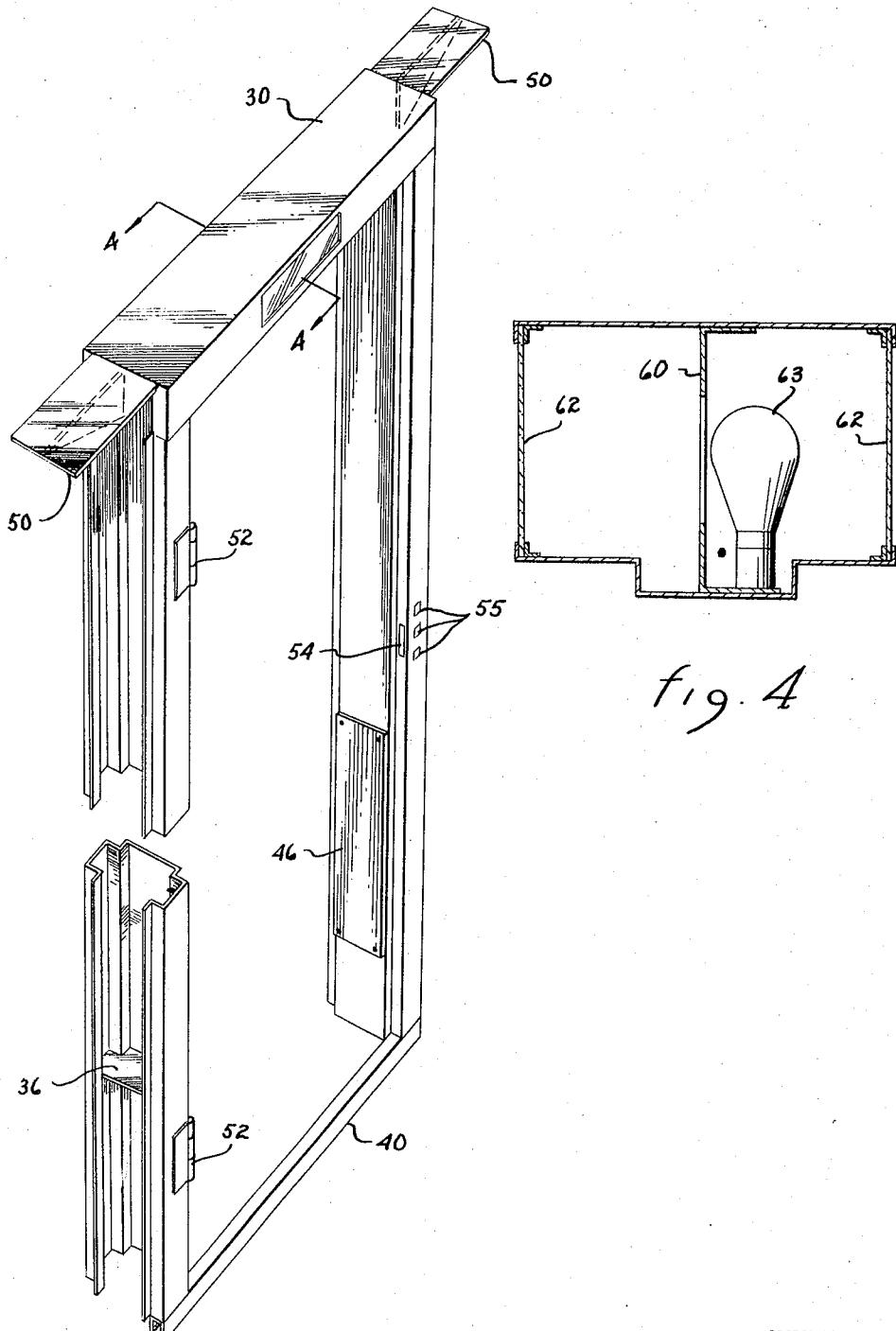


fig. 3

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CONDUIT SYSTEM FOR STRUCTURES HAVING MASONRY WALLS AND DOOR FRAMES

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The present invention pertains to a conduit system for masonry structures, and more specifically, to a conduit system including a metal door frame for greatly facilitating construction procedures.

The construction of masonry structures entails the cooperation of a mason and an electrician, working simultaneously, to construct the walls, doorways, etc., of the structure while properly wiring to provide the necessary electrical facilities. Unfortunately, since the mason cannot do electrical wiring, it is frequently necessary for the electrician to remain at a construction site for long periods of time while waiting for certain stages of the masonry structure to be completed. After each stage of the structure is completed, the electrician may then proceed to wire the structure as far as possible and then wait again until the next stage of construction is completed. The effect of this means of construction is inefficiency in both the work of the mason and the electrician. The time lost not only operates as an inconvenience but also greatly increases the cost of the structure.

In many types of construction where the wiring is to be placed within the masonry walls, building codes require that high voltage lines and low voltage (110 volt) lines be completely isolated from each other. In such instances, it becomes inconvenient to carry the wire or wires through a door frame. Other instances of the necessity for isolating one group of wires from another is illustrated by those instances in which it is necessary to separate television antenna leads from the power outlets in a structure. The difficulties arising in the latter case are similar to those arising when it is necessary to keep high and low voltage wires separated.

Accordingly, it is an object of the present invention to provide a conduit system for a masonry structure wherein high and low voltage lines may be safely isolated.

It is a further object of the present invention to provide a conduit system for masonry structures wherein the masonry work may be completed prior to wiring.

It is still another object of the present invention to provide a conduit system for masonry structures including a metal door frame having a plurality of compartments for maintaining the separation of separate voltage systems.

Further objects of the present invention will become apparent to those skilled in the art as the description thereof proceeds.

Briefly, in accordance with one embodiment of the present invention, a conduit system for masonry structures is provided wherein a pair of channels extending longitudinally through the masonry walls is provided. Each of these channels may take the form of a passageway extending through a course of concrete block or brick. At each of the inside corners or intersections of the respective walls the channels are rendered accessible by pull boxes which may also be used as an outlet box when wiring is completed. The conduit system includes a metal door frame having a hollow door jamb and a hinge-supporting member each provided with an access panel to provide a means for reaching the respective channels of the masonry structure when the panels are removed. When the metal door frame is in place, the hollow portions of the door jamb and hinge-supporting member communicate with the channels in the walls. The door jamb and hinge-supporting member are each divided into compartments electrically isolated from each

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other by a flat horizontal metal plate. Therefore, wires contained within the upper channel will communicate to the upper compartment of each of the door jambs and hinge-supporting members; similarly, those wires contained in the lower channel of the walls will extend into the lower compartments of the door jamb and hinge-supporting member. A hollow header member extends perpendicularly to the top of the door jamb and hinge-supporting member to form a continuous compartment; further, a square hollow sill communicates with the lower compartments of the door jamb hinge-supporting member. Therefore, electrical conductors contained in the upper channel of the walls will be placed in the upper compartment of the door frame and thus travel from the upper channel to the door jamb through the header and down the hinge-supporting member on the opposite side of the door frame and thence into the upper channel in the wall on the opposite side of the frame. Similarly, the lower conductor contained in the lower channel of the wall will travel to the lower compartment through the sill of the door frame and continue in a lower channel of the wall on the other side of the door frame.

The invention may more readily be described by reference to the accompanying drawings in which:

FIG. 1 is an isometric view of a portion of a masonry structure including a conduit system constructed in accordance with the teachings of the present invention.

FIG. 2 is an elevational view of the metal door frame included in the conduit system of FIG. 1.

FIG. 3 is an isometric view of the metal door frame of FIG. 2.

FIG. 4 is a sectional view of a portion of FIG. 3 taken along line 4—4.

Referring to FIG. 1, a masonry structure is shown comprising several courses of concrete blocks. The blocks may rest upon a concrete floor 10, as shown. A pair of channels 11 and 12 are provided and may be constructed in any convenient manner such as the use of concrete blocks with longitudinal openings therein; alternatively, the method illustrated in FIG. 1 may be used wherein the respective courses of the blocks may be laid using pairs of narrow width blocks to thereby define an inter-block space. At each inside corner of the walls, such as illustrated in FIG. 1, openings 15 and 16 are provided in each of the channels and may contain a pull box of the ordinary type and structure used in construction. A pull box at the strategic locations, such as that illustrated in FIG. 1, enables the conductors contained in the respective channels to be pulled through and guided to their respective ultimate destination. When the wiring is completed, the pull boxes may be used as double outlet boxes or may be sealed or covered with a removable panel. The two channels shown in FIG. 1 may be constructed in any convenient height from the floor such as, for example, having the lower channel situated one course above the floor to provide convenient electrical outlets at conventional locations. The upper channel may be spaced any distance above the lower channel and may conveniently contain television antenna leads which, because of the remoteness of the power conductor, are more or less isolated from the interference normally accompanying contiguous lengths of antenna lead and power conductors. A portion of a metal door frame 20 is shown in FIG. 1 to illustrate the communication of the respective channels 11 and 12 in the wall with the compartments of the metal door frame as will be explained more fully below.

The frame 20, shown partially in FIG. 1, may more readily be seen in FIGS. 2 and 3. Referring to FIG. 2, the metal door frame comprises a hollow door jamb 21 divided into a first compartment 24 and a second compartment 25 by a flat horizontal metal plate 26. The

first compartment 24 communicates with the interior of a hollow header 30 which joins the door jamb 21 at right angles. The opposite end of the header 30 communicates with a hollow hinge-supporting member 31 which, in most respects, is identical to the door jamb. The hinge-supporting member 31 is also divided into a first compartment 34 and a second compartment 35 by a flat horizontal metal plate 36. Therefore, the upper compartments 21 and 31 of the door jamb and the hinge-supporting member respectively form a continuous compartment with the hollow header 30 to enable the conductors contained in the upper channel 11 of the wall to follow a path up and over the doorway to the corresponding channel in the wall on the opposite side of the door frame.

A hollow sill 40, which may be embedded in the concrete floor, communicates with the lower compartment to the door jamb and hinge-supporting member. Thus, conductors contained in the lower channel 12 of the wall will follow a path from the door jamb 21 to the bottom of the doorway through the sill 40 to the bottom compartment of the hinge-supporting member 31 and thus to the lower channel in the wall on the opposite side of the doorway.

The header is provided with an access panel 45 that may readily be removed to aid in the wiring of the masonry structure after the structure has been constructed. Further, both the door jamb and the hinge-supporting member are each provided with a large access panel, 46 and 47 respectively, each of which, when removed, renders readily available both the upper and the lower compartments of the door frame, while simultaneously permitting access to the upper and the lower channels of the wall. The metal door frame may also be provided with gusset plates 50 serving as a lintel support for the courses of concrete block to be placed over the door frame. The hinge-supporting member 31 will be provided with hinges 52 that may be riveted or welded thereto, and the door jamb may contain an opening 54 to accommodate a door latch and openings 55 to permit the mounting of a light switch at doorknob level.

The hollow header member having the removable access panel lends itself to useful modifications such as that shown in FIG. 4. In FIG. 4 a cross section is shown of the header member of FIG. 3 taken along line 4—4. It may be seen by reference to FIG. 4 that a vertical stiffening member 60 may be secured longitudinal of the header and may be welded or riveted in place. The access panels 62, as shown in FIG. 4, take the form of sliding glass panels that may be illuminated by an electric lamp illustrated schematically at 63.

The conduit system of the present invention enables the masonry portions of the structure to be completely finished before the electrician begins wiring. As a consequence of the present invention, masonry structures can be constructed more rapidly and at less cost with efficient utilization of time and labor. It will be apparent to those skilled in the art that many modifications of the present invention may be made without departing from the spirit and scope thereof. Accordingly, the present invention is limited only by the scope of the appended claims.

I claim:

1. A metal door frame assembly comprising, a hollow door jamb divided into a first and second compartment and having a removable access panel covering a portion of said first and second compartments, a hollow hinge-supporting member parallel to said door jamb and divided into a third and a fourth compartment and having a removable access panel covering a portion of said third and fourth compartments, a hollow header member at right angles to and joining said door jamb and hinge-supporting member, the interior of said header member communicating with said first and third compartments to form a first conduit, a hollow sill at right angles to and joining said door jamb and hinge-supporting member, the interior of said sill communicating with said second and fourth compartments to form a second conduit, and a pair of dividing means each comprising a flat horizontal metal plate attached to said door jamb and said hinge-supporting member respectively for separating said first and second conduits.
2. An architectural construction comprising
 - (a) vertical masonry walls defining inside corners at their respective intersections, a pair of channels extending longitudinally within said walls;
 - (b) a hollow door jamb divided into a first and second compartment and having a removable access panel covering a portion of said first and second compartments;
 - (c) a hollow hinge-supporting member parallel to said door jamb and divided into a third and a fourth compartment and having a removable access panel covering a portion of said third and fourth compartments;
 - (d) a hollow header member at right angles to and joining said door jamb and hinge-supporting member, the interior of said header member communicating with said first and third compartments to form a first conduit, said first conduit being in communication with one of said pair of channels;
 - (e) a hollow sill at right angles to and joining said door jamb and hinge-supporting member, the interior of said sill communicating with said second and fourth compartments to form a second conduit said second conduit being in communication with the other of said pair of channels;
 - (f) dividing means disposed in said door jamb for separating said first and second compartments; and
 - (g) dividing means disposed in said hinge-supporting member for separating said third and fourth compartments.

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