Feb. 3, 1942. A. LACKEY 2,272,162

WALL CONSTRUCTION AND GROUND DEVICE THEREFOR

Filed Jan. 24, 1939 2 Sheets-Sheet 1

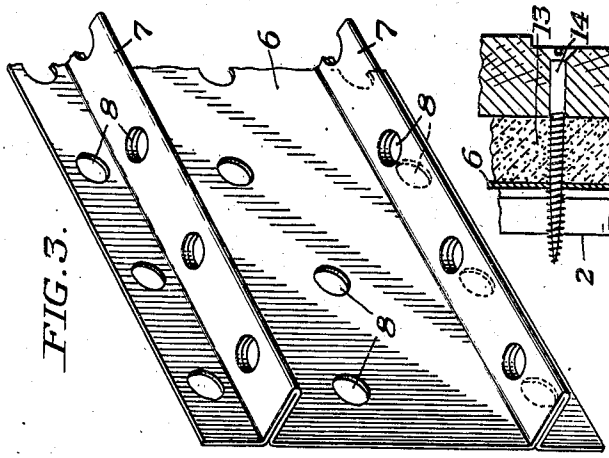


FIG. 3.

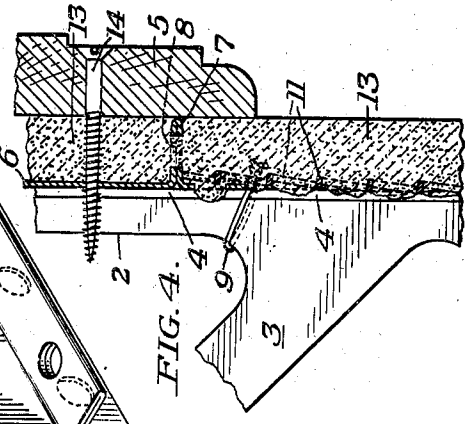


FIG. 4.

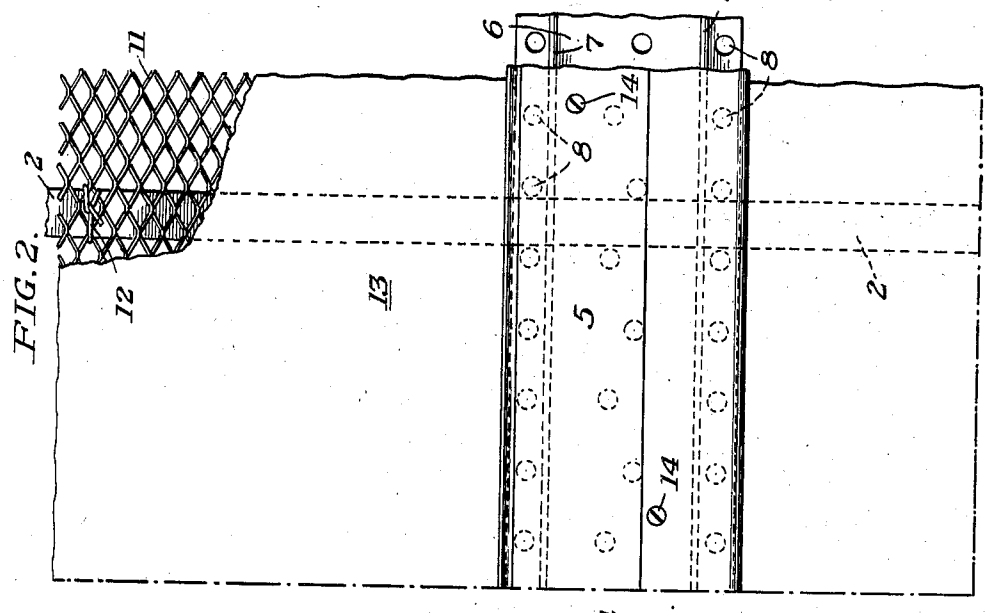


FIG. 2.

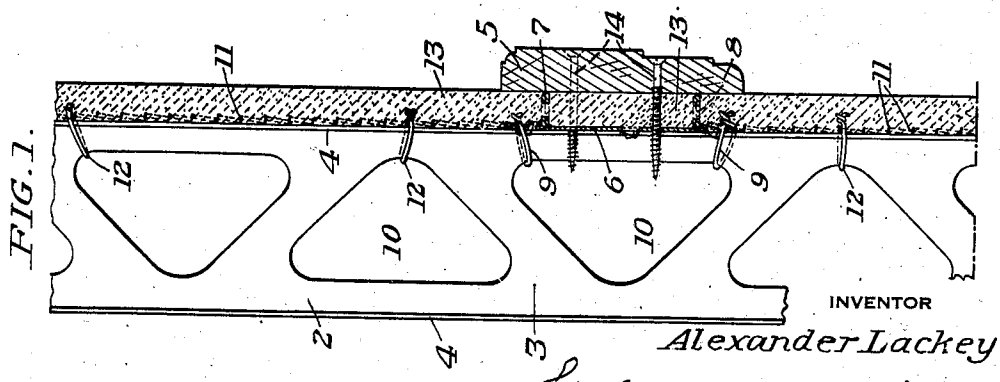


FIG. 1.

INVENTOR

Alexander Lackey

by Bellamy, Blanco & Pomeroy

his attorneys

Feb. 3, 1942. A. LACKEY 2,272,162

WALL CONSTRUCTION AND GROUND DEVICE THEREFOR

Filed Jan. 24, 1939 2 Sheets-Sheet 2

FIG. 5.

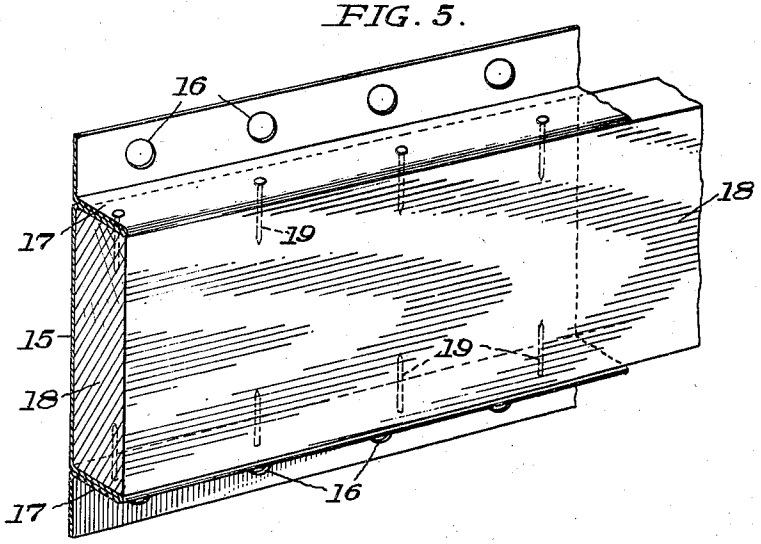


FIG. 6.

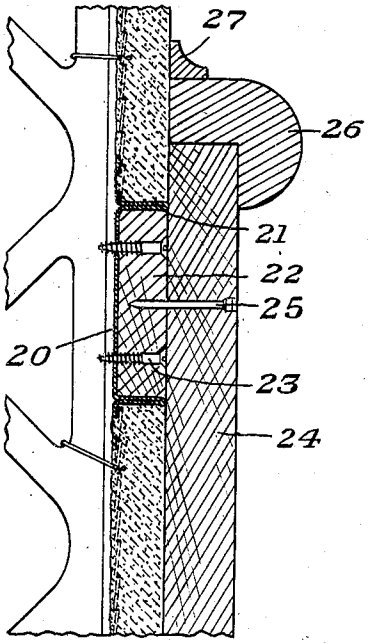
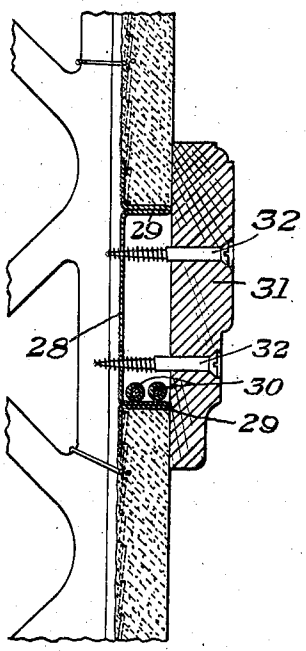


FIG. 7.



INVENTOR
Alexander Lackey

by Stebbins, Blum & Parmelee
his attorneys

Patented Feb. 3, 1942 2,272,162

UNITED STATES PATENT OFFICE

2,272,162

WALL CONSTRUCTION AND GROUND DEVICE THEREFOR

Alexander Lackey, Newton, Mass., assignor to The Consolidated Expanded Metals Companies. Wheeling, W. Va., a corporation of West Virginia

Application January 24, 1939, Serial No. 252,612

5 Claims. (Cl. 72—118)

This invention relates to wall construction and a ground device therefor. It relates more particularly to devices for use in the construction of lath and plaster walls, and especially devices for the attachment of trim or the like. It relates still more particularly to devices serving to indicate the approximate position where the surface of the plaster is to be in lath and plaster walls, particularly at locations where trim or the like is to be applied.

Difficulty has heretofore been encountered in the construction of lath and plaster walls in connection with the application of trim or the like for several reasons. The expression "trim or the like" as used herein means any permanent attachment to the wall extending outwardly from the surface of the plaster, as, for example, the usual chair rail, shelf rails, molding, etc. It is necessary to provide some special means for attachment of the trim or the like, as it is not practicable to attach the same simply to the plaster. It has heretofore been proposed to provide attaching means for trim or the like, such, for example, as wood strips, either wire tied over the lath or nailed to wood blocks secured to metal studs, and to which the trim or the like is adapted to be nailed or screwed. This type of construction is undesirable because the attaching means for the trim or the like has to be shimmed to line because of the unevenness in the surface of the lath caused by laps, ties and irregularities in the lath itself. The plaster is generally applied to the lath around the attaching means, and when the attaching means is of inflammable material, such as a wood strip, and particularly when the trim also is of wood, the fireproofness of the structure is greatly reduced. Also certain devices for use in lath and plaster walls commonly termed "grounds," are made of metal having generally V-shaped outward projections which leave in the finished wall air pockets which are not filled with plaster or any other solid substance. Walls thus constructed are undesirable from the acoustic standpoint, as their soundproofness is greatly reduced.

I provide for the attachment of trim or the like to a lath and plaster wall without impairing the fireproofness or soundproofness of the wall and without the necessity of shimming the attaching means or ground means, which are self-aligning. I preferably attach the ground means directly to the studding which supports the wall, and as the studding is properly aligned when it is installed the ground means is automatically properly aligned by the studding. In a preferred form of structure I provide a ground device readily perforable to receive fastening means for attaching the trim or the like to the wall and having means extending therefrom to serve as guide means to indicate the approximate position of the surface of the plaster.

Other details, objects and advantages of the invention will become apparent as the following description of certain preferred embodiments thereof proceeds.

In the accompanying drawings I have shown certain present preferred embodiments of the invention, in which—

Figure 1 is a vertical transverse cross-sectional view through a portion of a wall construction;

Fig. 2 is a fragmentary face view of the wall construction shown in Figure 1 with portions of the plaster and a portion of the trim removed;

Figure 3 is a perspective view of a portion of a ground plate;

Figure 4 is a vertical transverse cross-sectional view to enlarged scale of a portion of the structure shown in Figure 1;

Figure 5 is a perspective view of a portion of a ground plate with a wood filler strip fastened thereto between the flanges thereof;

Figure 6 is a vertical transverse cross-sectional view of another form of structure employing a wood filler strip; and

Figure 7 is a vertical transverse cross-sectional view of still another form of structure in which the space between the flanges of the ground plate is left open to accommodate wires and the like.

Referring now more particularly to the drawings, there is illustrated a lath and plaster wall which in general is of standard construction carried by studding in the form of spaced metal studs 2. Each stud 2 comprises a web portion 3 and opposed flanges 4. The studs are arranged in upright position and are spaced at suitable intervals with their web portions lying respectively in parallel planes and their flanges lying in common parallel planes. In the drawings only one face of the wall (i. e., that shown at the right-hand side of Figure 1) is shown as finished. In an ordinary single partition lath and plaster are applied to both sides of the studding, although in some cases, as, for example, in furring for exterior walls or in double walls, lath and plaster are applied to only one side of the studding.

The wall shown in the drawings is provided with trim 5 shown as being in the form of the usual wooden trimming strip or chair rail extending around the room at a height of about 30 inches from the floor. To provide for application

of the trim 5 there is provided a ground device shown in Figures 1 to 4, inclusive, as constituted by a sheet metal ground plate 6. The structure of the plate shown is clearly illustrated in Figure 3. The plate consists of an elongated strip of sheet metal deformed to provide a pair of spaced double thickness flanges 7 extending outwardly at substantially right angles to the plane of the plate and elongated in the direction of elongation of the plate. The flanges are integral portions of the sheet metal of the plate formed by bending them up out of the body of the plate and pressing together the opposed portions of the bent up metal, as clearly shown in Figure 3. The body of the plate and the flanges thereof are provided with perforations 8 of such size as to receive portions of the plaster of the wall facing to effectively key the plaster to the plate, as will presently be described. The outer extremities of the flanges 7 serve to indicate the approximate position of the surface of the plaster in the wall; and the flanges also render the plate strong and rigid. They also serve as means for indicating where the trim is to be applied and as bearing means for the trim. The trim is connected with the ground plate as will presently be described. The ground plate is provided in convenient lengths and cut to length as may be required in any particular installation.

The plate 6 is wired to the studding 2 by wires 9 passing through openings 10 in the studs and through the perforations 8 in the body of the plate 6 lying outside the flanges 7. The plate 6 is thus attached to the studding extending around the room or as far as may be desired, after which lathing is applied to the studding and attached thereto in usual manner. The lathing is shown as being in the form of expanded metal lath 11, which I find best suited for the purpose. A section of lath is fastened to the studding above the plate 6 and another section of lath is fastened to the studding below the plate 6. Preferably the lathing overlaps the portions of the body of the plate 6 lying outside the respective flanges 7. The lathing is shown in the drawings as being fastened to the studding by wires 12.

After the ground plate and lathing have been applied as above described the wall is plastered, the plaster being applied to the lathing in the usual manner and also being applied over the ground plate between and outside the flanges 7 thereof. The plaster is designated by reference numeral 13. The plaster enters the meshes of the expanded metal lath and "keys" thereto, whereby to form a strong permanent wall facing. The plaster also enters the openings 8 in the ground plate and keys thereto in similar manner. Thus there is practically no substantial interruption of the plaster over the entire surface of the wall. The only interruption of the plaster is along the very narrow spaces occupied by the flanges 7 of the ground plate 6, but the plaster even passes through the spaced openings 8 in these flanges. Consequently the soundproofness and fireproofness of the wall are to all intents and purposes as great as those of a similar wall not having any ground or trim or the like applied thereto.

The flanges 7 of the ground plate 6 project substantially to the wall surface as shown in Figures 1 and 4 and serve as guide means to indicate the approximate position of the surface of the plaster. This assists in promoting uniformity of the thickness of the plaster in the wall. The flanges 7 of the plate 6 also serve to strengthen the wall against force or pressure applied at right angles to the wall between studs, as when trim is being attached. Theoretically the outer edges of the flanges 7 lie at the wall surface, although if desired they can be thinly covered with plaster.

The trim 5 is placed over the ground plate 6 and is fastened to the ground plate by screws 14. Preferably the trim is first set temporarily in place and holes then drilled through the trim, plaster and ground plate, which is readily perforable, after which the screws are screwed in to hold the trim in place relative to the ground plate. Preferably tapered screws are used, the holes bored in the ground plate being of such size that the screws will be snugly received therein whereby to hold the trim or the like firmly in place. The screw receiving holes in the ground plate are adapted to receive screws for attaching trim or screws for attaching other means, such as wood strips (see Figure 6), and in certain of the claims the expression "trim or the like" includes means such as wood filler strips.

The flanges of the ground plate serve to indicate the proper position for the trim so that after the wall has been otherwise completed and the plastering finished the trim may be applied. The trim bears upon the flanges 7 of the plate 6 and ordinarily the inner face of the trim lies directly against the outer edges of the flanges. If, however, the outer edges of the flanges are thinly covered with plaster the inner face of the trim may not lie directly in contact with the outer edges of the flanges, but when the screws 14 are tightened up the load will be carried at least mainly by the ground plate and not by the general body of plaster in the wall.

Instead of applying plaster in the space between the flanges of the ground plate I may and sometimes prefer to fill such space with blocks or strips of wood or to partially fill such space with wood and partially fill it with plaster. When wood filler strips or blocks are to be employed such strips or blocks may be fastened to the ground plate either prior to installation thereof, as, for example, at the factory, or in the field after attachment of the ground plate to the studding, and the means for attaching the trim or the like may in such case have retention in the wood strips or blocks only and not necessarily also in the ground plate itself.

In Figure 5 is shown a ground plate 15 of the same general structure as the ground plate 6 of Figures 1 to 4, inclusive, but having perforations 16 only in the portions of the plate outside the flanges 17. The flanges 17 and the portion of the plate intermediate such flanges are preferably imperforate, as openings therein would have little or no function, particularly if the wood filler strip should be applied before installation, as, for example, at the factory where the ground plates are made. The wood filler strip 18 shown in Figure 5 is of such size as to fit snugly against the ground plate between the flanges thereof and such strip is shown as being permanently connected with the ground plate by nails 19 passing through the flanges of the ground plate and into the edges of the wood filler strip 18. This manner of attaching the wood filler strip to the ground plate is particularly adaptable for use when the wood filler strip is attached to the ground plate at the factory.

In Figure 6 there is shown another form of structure in which the ground plate 20 is im-

perforate save at the portions thereof lying outside the flanges 21 and is provided with a wood filler strip 22 connected with the ground plate by screws 23 which function similarly to the screws 14 of Figures 1, 2 and 4 except that they pass only through the wood filler strip and ground plate and not through the trim. The trim comprises a trim member 24 which is nailed to the wood filler strip 22 by nails 25, and also trim members 26 and 27 as shown. The particular form of the trim, of course, has no bearing on the present invention.

The substitution of wood for plaster between the flanges of the ground plate does not substantially reduce the soundproofness of the finished wall with the trim applied as compared with a similar finished wall with plaster between the flanges of the ground plate. Moreover, as the ground plate is made of metal and is substantially continuous the fireproofness of the wall is not greatly impaired. As indicated above, if it is known in advance of manufacture that the ground plate is to be used with blocks or strips of wood instead of plaster between its flanges the portion or portions of the ground plate against which the wood lies in use will preferably not be provided with key openings, although a ground plate as shown in Figure 3 with key openings in and intermediate its flanges may be employed if desired. Key openings or perforations are also preferably omitted between the flanges of ground plates whose flanges are not more than about 1" apart.

In Figure 7 there is shown a further modified form of structure in which the ground plate may, for example, be of the structure of the ground plate 17 shown in Figure 5, having key openings only at the portions thereof outside its flanges. The ground plate in Figure 7 is designated by reference numeral 28 and the space between its flanges 29 is left open to accommodate wires and the like. A pair of wires extending longitudinally along the ground plate and lying between the flanges 29 thereof are shown at 30. The trim 31 is shown as being fastened to the ground plate by screws 32 functioning similarly to the screws 14 of Figures 1, 2 and 4. The screws 32 may enter the ground plate at the portions thereof lying outside its flanges 29. When this is done the entire space between the flanges of the ground plate is left free for the reception of wires and the like. However, such space will seldom be needed in its entirety, and if not it is generally preferable to have the screws holding the trim in place enter the imperforate portion of the ground plate between the flanges of the ground plate as shown, as then there will be no danger that the screws may pass through key openings in the ground plate instead of through the metal of the plate itself as is possible when the screws pass through the portions of the ground plate lying outside the flanges.

While I have shown and described certain present preferred embodiments of the invention, it is to be distinctly understood that the same is not limited thereto but may be otherwise variously embodied within the scope of the following claims. The word "portion" as used in the claims to denote a projecting part of the ground means contemplates either one or more such projecting parts.

I claim:

1. Wall construction, comprising studding, ground means connected with the studding and extending generally parallel to the plane of the wall, the ground means having spaced portions projecting substantially to the wall surface, lath and plaster facing also connected with the studding and whose outer surface defines the wall surface, the facing being discontinuous across the space between said spaced portions of the ground means and such space being uninterrupted whereby to provide a conduit for wires and the like in the wall, and trim or the like projecting outwardly beyond the outer surface of the facing, the trim or the like being fastened to the ground means.

2. Wall construction, comprising spaced generally upright studs, ground means extending generally transversely of the studs and spanning the space between adjacent studs, lath and plaster facing also spanning the space between adjacent studs, and trim or the like projecting outwardly beyond the outer surface of the facing, the trim or the like being fastened to the ground means.

3. Wall construction, comprising spaced studs, a ground plate extending generally transversely of the studs, individual fastening means fastening the ground plate to the respective studs, lath and plaster facing spanning the space between adjacent studs, and trim or the like projecting outwardly beyond the outer surface of the facing, the trim or the like being fastened to the ground plate.

4. Wall construction, comprising spaced studs, a ground plate extending generally transversely of the studs and having openings therein for the reception of means for fastening the same to the studs, means entering said openings fastening the ground plate to the studs, lath and plaster facing spanning the space between adjacent studs and trim or the like projecting outwardly beyond the outer surface of the facing, the trim or the like being fastened to the ground plate.

5. Wall construction, comprising spaced studs, a ground plate extending generally transversely of the studs, the ground plate having spaced portions projecting substantially to the wall surface, lath and plaster facing spanning the space between adjacent studs and whose outer surface defines the wall surface, there being plaster between the projecting portions of the ground plate, and trim or the like projecting outwardly beyond the outer surface of the facing, the trim or the like bearing upon the projecting portions of the ground plate and being fastened to the ground plate.

ALEXANDER LACKEY.