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COMBINATION WALL TIE, DRAFT STOP AND DRAINAGE MEANS FOR WALL CONSTRUCTIONS

Filed May 22, 1964

FIG. 1.

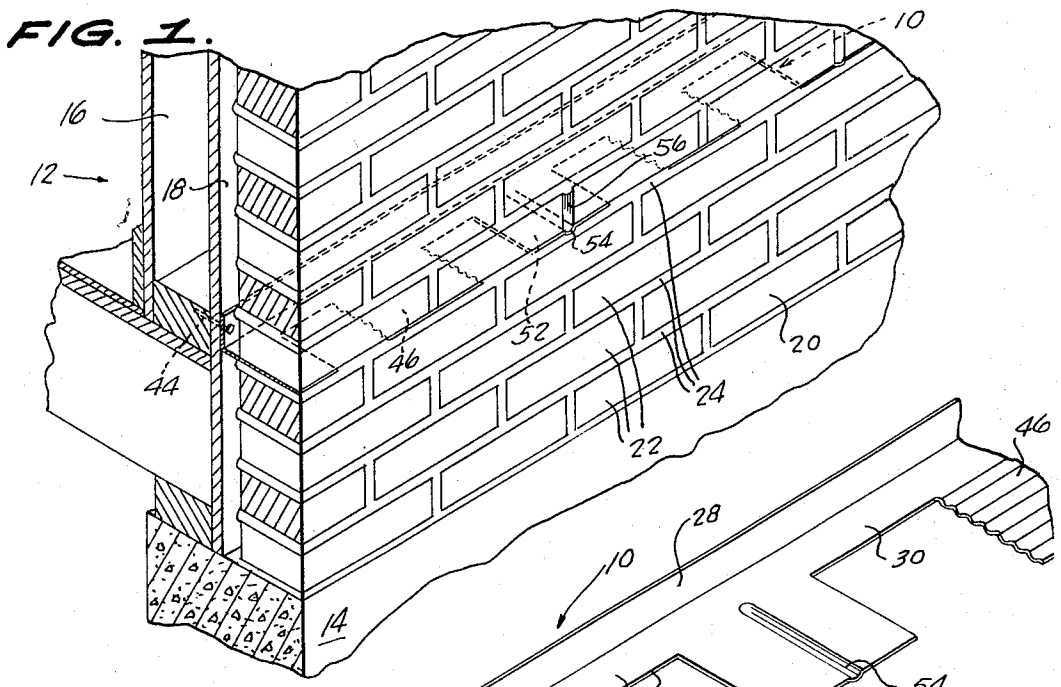


FIG. 2.

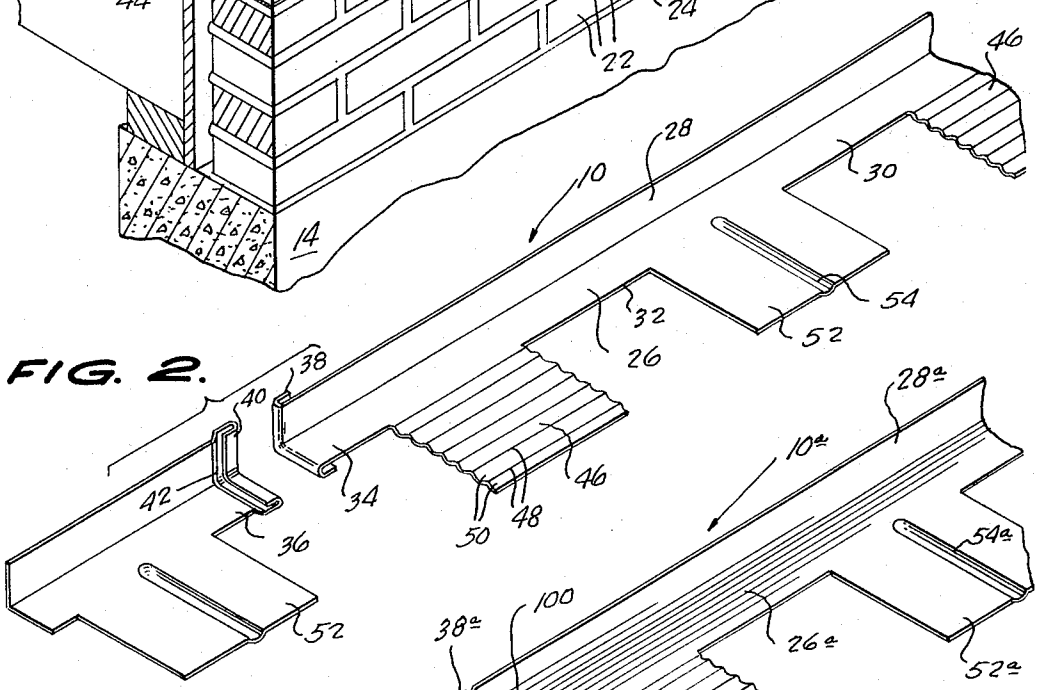


FIG. 3.

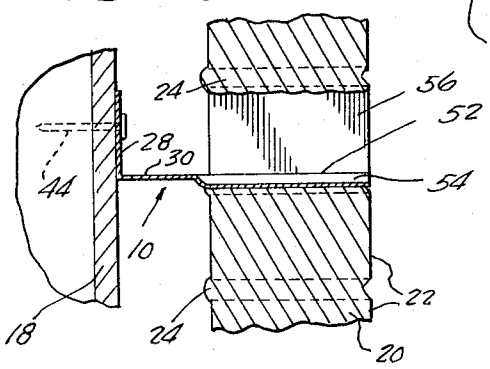


FIG. 4.

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COMBINATION WALL TIE, DRAFT STOP AND DRAINAGE MEANS FOR WALL CONSTRUCTIONS

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This invention relates to a wall tie construction employed in buildings, and particularly those buildings wherein there is supplied an outer wall of masonry and an interior frame wall—this building construction being of the type known as "brick veneer," and the present apparatus being mounted between the inner frame wall and the outer masonry wall.

The present invention comprehends a construction wherein there is provided a wall comprising an interior frame wall and an outer wall, and a tie means extended between the outer and inner walls. The tie means hereof has a three fold basic objective including the provision of a connection means for securing the outer wall to the inner wall; the provision of an effective fire stop means between the walls; and the provision of a flashing which prevents water from gravitating into the basement or lower area between the walls and aids in the expulsion of water from the area between the walls.

An object of this invention resides in the provision of an effective tie means secured to an inner wall and embedded in an outer wall to space the walls from one another and to aid in maintaining the outer wall in place.

Another object of significance resides in the provision of a metallic barrier means positioned between spaced apart walls, whereby updraft air currents between the walls are reduced or eliminated, the barrier further serving as a fire stop means.

A still further object is to provide a waterproof barrier means between spaced apart walls, and channel means in association therewith serving to effectively exclude the passage of water and to vent the water to the outside of the building.

Other and further objects and advantages of the invention will become apparent to those skilled in the art from a consideration of the following specification when read in conjuntcion with the annexed drawing, in which:

FIGURE 1 is a fragmentary perspective view of a section of wall construction with a wall tie constructed and assembled in accordance with the teachings of this invention in place, the construction being shown in section at one end;

FIGURE 2 is an enlarged, fragmentary, disassembled perspective view of the wall tie assembly hereof;

FIGURE 3 is an enlarged, detail sectional view of the wall construction; and

FIGURE 4 is a further enlarged, fragmentary perspective view showing a modified form of tie member.

Referring to the drawing in more detail, the tie member of this invention is shown in a first form in FIGURES 1 to 3 and is therein identified by reference numeral **10**. The tie members **10** find a preferred environment of use in a building construction **12** which includes a footing **14** on which is provided an interior frame wall **16**, including a vertically arranged, flat outer member **18**, and an outwardly spaced masonry wall **20**. The wall **20** includes rows of bricks **22**, and layers of mortar **24** between the rows and the individual bricks. This type of wall construction is per se conventional, and is often referred to as "brick veneer."

To rigidify the wall, support and connect the outer wall **20** to the inner wall **16**, provide a fire barrier between the walls, and provide a water barrier therebetween, the tie members **10** of this invention are provided in an end-to-end string between the walls **16** and **20**, preferably above ground level.

The tie members individually comprise an elongated, substantially L-shaped body portion **26** which includes an elongated, substantially rectangular back member **28** and an outwardly directed, substantially rectangular, perpendicularly related foot member **30**. The foot member has a forward end edge **32**, and the body portion **26** includes sides **34** and **36** (FIGURE 2) with opposite, rebent flanges **38** and **40** thereon whereby the members are adapted for connection in end-to-end relation. As shown, one of such flanges may be inwardly bent from the general flatwise plane of the members **26** and **28**, as at **42**, to insure alignment of the body portions. As seen in FIGURES 1 and 3, the back members **28** are secured to the wall member **18** by nails **44**, with the foot members **30** thereof projecting outwardly toward the outer wall **20**.

Extending from the edges **32** of the foot members **30** at spaced locations is a plurality of connection plates **46**. The plates **46** are of a depth substantially equal to the thickness of the outer wall, and are corrugated laterally having plural ridges and grooves **48** and **50**, respectively. The connection plates are embedded in one of the layers of mortar **24**, which hardens in the grooves **48** to form a plurality of mortar ridges and grooves interlocking with the plate ridges and grooves.

The tie members further include drainage plates **52** projecting outwardly from the edge **32** of the foot members **30** at spaced locations. The plates **52** are substantially flat, and have a central, downwardly struck trough or channel **54** extending, as seen in FIGURE 3, into the foot member **30**. The plates **52** are embedded in the mortar **24**, but an opening in the mortar or weep hole **56** is provided therein above the trough **54**. Thus, any water collecting on the foot member **30** is drained outwardly of the building through the trough **54** and hole **56**.

In FIGURE 4, a modified construction is shown, comprising a tie member **10*a*** with a body portion **26*a*** including a back member **28*a*** merged with a foot member **30*a*** at an arcuate connecting portion **100**. The tie members **10*a*** have rebent flange means **38*a***, for end-to-end connection thereof, and also have projecting connection plates **46*a*** and drainage plates **52*a***. Due to the arcuate form of the connecting portion **100**, improved drainage to the troughs **54*a*** is provided.

As will be noted in FIGURE 1, when in place the foot members **26** or **26*a*** extend fully across the space between the vertical wall members **16** and the outer wall **20**. Thus, updraft air currents between the walls are prevented thereby reducing the likelihood of fire spreading between the walls and acting as a block to the possible spread of flame therebetween. Further, the passage of water is effectively precluded, and any water entering the walls is directed outwardly. Finally, the outer wall is supported in spaced relation to the wall **16**.

Having described and illustrated two embodiments of this invention in some detail, it will be understood that these descriptions and illustrations are offered merely by way of example, and that the invention is to be limited in scope only by the appended claims.

What is claimed is:

1. In a wall construction which includes an inner wall with a vertically disposed outer member, and an outer wall of masonry construction with rows of blocks and mortar between the rows, a wall tie assembly comprising:

a plurality of tie members, each having an elongated, substantially L-shaped main body portion;

each main body portion including an elongated, substantially rectangular back member and a substan-

tially perpendicularly related, outward foot member;
the back members being secured to the vertically disposed outer member;
the foot member including an outer edge;
a plurality of connection plates projecting outwardly from the outer edge of each foot member at spaced apart locations;
each connection plate having a series of longitudinally extending ridges and grooves therein and being embedded in the mortar between a row of the blocks;
drainage plates projecting outwardly from the outer edge of the foot members at spaced locations and being embedded in the mortar;
the drainage plates having a laterally extending trough therein, and the mortar having a weep hole formed therein over the trough; and
the tie members having reverted flange means on the ends thereof interfitting together for connection of a series thereof.

2. In a wall construction which includes an inner wall with a vertically disposed outer member, and an outer wall of masonry construction with rows of blocks and mortar between the rows, a wall tie assembly comprising:
a plurality of tie members, each having an elongated main body portion;
each main body portion including an elongated back member and a foot member;
the back members being secured to the inner wall;
a plurality of connection plates projecting outwardly from each foot member at spaced apart locations;
each connection plate having a series of longitudinally extending ridges and grooves therein and being embedded in the mortar between a row of the blocks;
drainage plates projecting outwardly from the foot members at spaced locations and being embedded in the mortar;
the drainage plates having a laterally extending trough therein, and the mortar having a weep hole formed therein over the trough; and

means on the ends of the tie members interfitting together for connection of a series thereof.

3. A wall construction as defined in claim **2**, and:
an arcuate connecting portion between each back and foot member.

4. A combination wall tie, draft stop and drainage element for "brick veneer" wall construction including spaced-apart inner and outer walls comprising;
an elongated main body member including a back portion adapted to be secured to the inner wall of said wall construction and a foot portion extending outwardly from the lower edge of said back portion and adapted to constitute a water collector and draft stop in the space between said walls, said foot portion having at least one wall tie portion and also at least one weep trough portion extending outwardly therefrom and each tie portion and trough portion adapted to be inserted between two vertically-contiguous courses of bricks of such outer wall to tie the two walls together and to provide a weep trough through the outer wall.

5. An element as set forth in claim **4**, and in which said body member has at its ends means for connecting said body member to the end of a similar main body member in mutual longitudinal alignment.

6. An element as set forth in claim **4**, and in which said drain trough is depressed downwardly in the trough portion.

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