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E. WEIL

1,833,925

MASONRY WALL AND DAMPPROOF INSERT THEREFOR

Filed Sept. 23, 1930

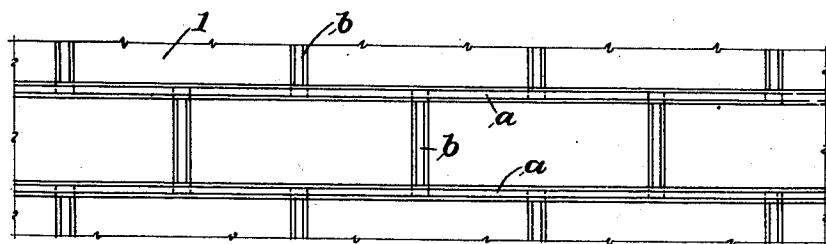


Fig. 1

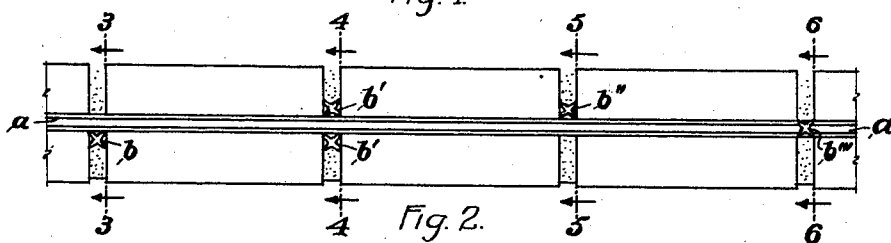


Fig. 2.

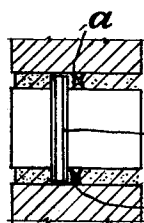


Fig. 3.

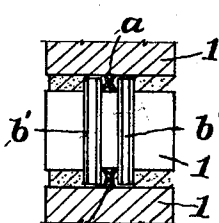


Fig. 4.

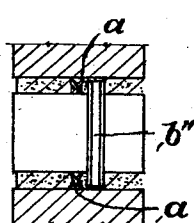


Fig. 5.

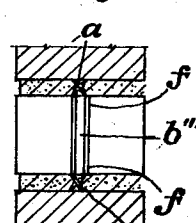


Fig. 6.

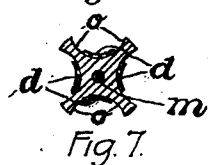


Fig. 7.

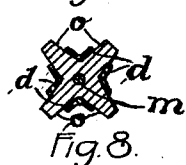


Fig. 8.

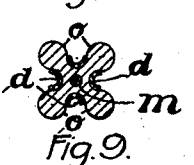


Fig. 9.

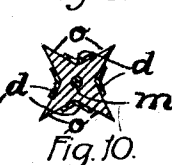


Fig. 10.

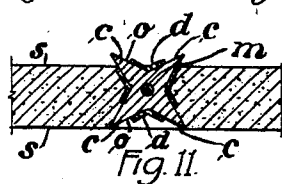


Fig. 11.

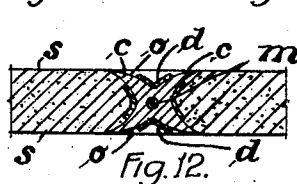
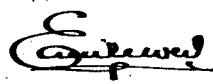


Fig. 12.


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MASONRY WALL AND DAMPPROOF INSERT THEREFOR

Application filed September 23, 1930. Serial No. 483,864.

The invention relates to improvements in masonry and like walls and a waterproof protective insert for use in the mortar or plastic joints thereof.

5 The invention aims to provide an insert which may be applied in any desired length and/or height or in overlapping or abutting lengths to cover any desired number of bricks or blocks and prevent penetration of water or dampness through the joints of the wall.

10 The invention further aims to provide an insert which may be readily applied in either vertical or horizontal joints, which will conform and adjust itself to irregularities in the contact faces of the bricks or blocks of which the wall is composed, and which will interlock with the mortar or other binder and will not interfere with bonding surface efficiency of the mortar or other binder.

20 The invention further aims to provide an insert having a plurality of flexible, yielding contact points projecting from the mortar or other binder throughout the extent of the joint for ready spreading in sealing contact with the bricks or blocks of which the wall is composed.

25 The invention further aims to provide an insert having plural contact with each brick or block which it engages, such contact continuing throughout the extent of the joint and lengthwise of the insert.

30 Other objects will appear hereinafter, in the description of the invention which includes the construction, arrangement and combination of parts, and in the claims in which the invention is particularly defined.

35 In the drawings,

40 Figure 1 is an elevation showing the face of a wall and shows in X-ray fashion the waterproofing insert strip laid both horizontally and vertically and simply assumes that one looks straight through the mortar and sees the strips of the insert in the joints.

45 Figure 2 is a top plan view of a portion of a wall of one brick thickness and shows the waterproofing insert strip running horizontally from *a* to *a* on top of the bricks, while it also shows the waterproofing insert strip used vertically running down through the joints at the points *b*, *b'*, *b''* and *b'''*. The

vertical strip is shown overlapping either on one side or the other of the horizontal strip *b* and *b''*, is shown on both sides of the horizontal strip at *b'* and is shown in X-ray fashion at *b'''*, simply assuming that one looks straight down through the horizontal strip and sees the vertical strip, abutting and interlocking with the horizontal strip as further explained in Figure 6.

55 Figures 3, 4, 5 and 6 are sections on lines 3—3, 4—4, 5—5 and 6—6 of Figure 2. At the points *a* is seen a sectional view of the waterproofing insert strips, of the upper one of which is seen a top horizontal view in Figure 2 from *a* to *a*. At the point *b* is seen a side view of the waterproofing insert strip, the top of which is seen at the point *b* in Figure 2. At the points *b'* is seen a side view of the waterproofing insert strips, the top of which is seen at the points *b'* in Figure 2. At the point *b''* is seen a side view of the waterproofing insert strip, the top of which is seen at the point *b''* in Figure 2. At the point *b'''* is seen a side view of the waterproofing insert strip, the top of which is seen in X-ray fashion at the point *b'''* in Figure 2.

70 Figures 7, 8, 9 and 10 are sectional views of various shapes of the waterproofing insert strip of my invention adapted to lie in the joints; but the waterproofing insert strip may be of any shape which will provide a plurality of contact points projecting from the mortar or other binder throughout the extent of the joint for ready spreading in sealing contact with the bricks or blocks of which the wall is composed.

75 Figure 11 is a sectional view of the same shape of the waterproofing insert strip of my invention shown in Figure 10, but in Figure 11 the waterproofing insert strip is shown lying in a horizontal joint embedded in the mortar as it would appear without contact with the upper brick or block of the wall.

80 Figure 12 is a compressed view of Figure 11 showing how the waterproofing insert strip would spread and make contact when the upper brick or block is placed in position and a brick or block has made contact with the opposite sides of the waterproofing insert strip in the finished wall.

The abutting bricks or blocks of the masonry are not shown in Figures 11 and 12, but it will be understood that in Figure 11 a brick or block has been applied along the line *s*, representing the lower surface of the binder, and that in Figure 12 a brick or block has been applied along both of the lines *s*, representing the upper and lower surfaces of the binder.

Referring to the drawings, in Figures 1, 2, 3, 4, 5 and 6, vertically disposed portions of the waterproofing insert strip are indicated at *b*, *b'*, *b''* and *b'''*, while horizontally disposed portions of the waterproofing insert strip are indicated at *a*. The inserts are embedded in the mortar joints, as shown in Figures 11 and 12, with flexible, yielding, protruding portions, points or ribs, *c* forming a plural contact with the bricks or blocks of the wall, which compress the protruding portions, points or ribs and effect a water tight contact.

This waterproofing insert strip may be made in the form of a continuous strip of any of the cross-sectional shapes shown in Figures 7, 8, 9 and 10 or any other shape which would provide two or more contact portions, points or ribs.

The waterproofing insert strip may be of any material, but is preferably of asphaltic, bituminous or coal tar mastic material, compound or composition, or any other waterproof material compound, or composition, which will not be deformed by ordinary handling in hot weather or become hard and brittle in cold weather, and which will provide flexible, yielding, protruding contact portions, points or ribs *c* to provide a superior contact and an absolutely effective water seal; and may have a reinforcement *d*, preferably of waterproofing paper, but of any paper, felt, or metal, for better maintaining the section of the waterproofing insert strip in its handling and installation. These reinforcements *d* will serve only to stiffen the body of the waterproofing strip and will not interfere with or stiffen the flexible, yielding contact portions, points or ribs *c*, since these reinforcements are disposed within the grooves or recesses between the projecting portions, ribs or points. Reinforcement means, in the form of a rod or strip of metal *m* may be inserted substantially centrally in the body of the waterproofing insert strip extending longitudinally thereof as shown in Figures 7, 8, 9, 10, 11 and 12.

The waterproofing strip as an insert for joints of masonry may be either vertical or horizontal or both for the purpose of preventing penetration of moisture or water through the joints by virtue of its sealed contact points in compressed engagement with the masonry members.

The waterproofing insert strip may be of any length for simplification of manufacture

or installation and of any size for any thickness of joint.

These strips or inserts are so formed to provide automatically in any method of installing in either or both vertical or horizontal joints a plural contact with the masonry members of the wall. In cross-section these strips are preferably in the general form of a cross providing projections approximately 90° apart so that two projections are readily available for contact with the bricks or blocks on either side, and no particular care is required in placing the strips so that two projections are exposed on each side of the mortar or other binder. In any event the waterproofing insert strip is of a section providing plural projections on each face of the mortar.

It will be noted that the inserts are slightly larger than the joint thickness to assure contact and cover any irregularities in the masonry or contact members of the wall.

These waterproofing insert strips may be used for caulking openings in walls, being placed between the metal, wood or other frames and the contact wall for the prevention of water penetration at such points, as is now prevalent; and they may also be used for waterproofing any surface composed of tiles, slabs, bricks or blocks, being placed in the joints between the tiles, slabs, bricks or blocks for the prevention of water penetration at such points, as is now prevalent.

It will be seen that in Figures 3, 4, and 5 the waterproofing insert strip used vertically merely overlaps on one side or the other the waterproofing insert strip used horizontally or overlaps on both sides of it; but in Figure 6 is shown a preferred form of the waterproofing insert strip used vertically in which the vertical waterproofing insert strip has keyed or tapered ends, *f*.

These keyed or tapered ends, tho shown in Figure 6 to be pyramidal in shape, may be of any desired or convenient shape, adapted to extend at right angles thereto into the longitudinal recesses or grooves of the horizontal waterproofing insert strips to form a lock or key, and in compressed relation with the flexible, yielding portions, points or ribs *c* to form an effective water tight seal substantially continuous throughout both horizontal and vertical joints of the masonry wall.

The invention may be applied to a wall of one brick or block thickness or it may be applied to a wall of greater thickness comprising a plurality of courses, with equal facility and with equal effectiveness.

Referring to Figure 12 showing the four pointed star shape of the waterproofing insert strip with the sharpened ends depressed, this view shows the manner in which the abutting faces of the masonry or other construction depress and force the projections

into the mortar or binder. The mortar or binder yields to some extent as indicated by the position in Figure 12 of the projections of the waterproofing insert strip while providing sufficient resistance that the depressed flexible, yielding projections are maintained in effective sealing engagement with the irregularities of the abutting faces of the masonry.

A space is provided at point *o*, Figures 7, 8, 9, 10, 11 and 12, beyond the edge of the reinforcement *d*, which will permit expansion and flow of the mastic material inwardly against the abutting bricks or blocks for further sealing effect after the compression of the waterproofing insert strip by the abutting bricks or blocks, outward flow being prevented by the mortar or other binder.

The space *o* also provides for flow in the event of expansion of the mastic material due to temperature changes after the masonry wall is set, and to more firmly seal the joint.

I claim:

1. In a plastic joint for masonry or similar construction, the combination with adjacent bricks or blocks and the interposed plastic binder, of a protective insert embedded in the binder and providing a plurality of flexible, yielding projections at each face of the binder for contact with the adjoining faces of the bricks or blocks at a plurality of points to form a plural sealing contact against the passage of moisture.

2. In a plastic joint for masonry or similar construction, the combination with adjacent bricks or blocks and the interposed plastic binder, of a protective insert embedded in the binder and providing a plurality of flexible, yielding longitudinal ribs or projections, at each face of the binder for contact with the adjoining faces of the bricks or blocks at a plurality of points to form a plural sealing contact against the passage of moisture.

3. A plastic joint for masonry according to claim 1 in which said protective insert comprises a strip of material providing a plurality of flexible, yielding contacting projections.

4. A plastic joint for masonry according to claim 1 in which said protective insert comprises a strip of material adapted to be cut to length for insertion in both horizontal and vertical joints.

5. A plastic joint for masonry according to claim 1 in which said protective insert comprises a strip of material of substantially cross or X shape in section, said insert being adapted to automatically assume a position such that two of the projections of the cross or X will be associated with one face of the binder and the other two of the projections of the cross or X will be associated with the other face of the binder.

6. A plastic joint for masonry according

to claim 1 in which said protective insert comprises a strip of material of substantially cross or X shape in section, having four arms substantially at right angles to each other, and providing recesses between them, reinforcement means in the recesses, said insert being adapted to automatically assume a position such that two of the arms of the cross or X may be made to lie in spaced apart relation at one face of the binder, while the other two arms may be made to project in spaced apart relation from the opposite face of the binder.

7. In masonry construction, the combination with superposed rows of bricks or blocks and interposed binder, of a protective insert of strip material embedded in the binder of a horizontal joint and bridging the vertical joints between the bricks or blocks, said insert having a plurality of flexible, yielding contact points or ribs at each face of the binder to be compressed against the faces of the bricks or blocks, and a like protective insert embedded in the binder of a vertical joint between the bricks or blocks and contacting the first mentioned insert where it bridges the vertical joint.

8. Masonry construction according to claim 7 in which said vertical insert engages the horizontal insert in overlapping relation.

9. Masonry construction according to claim 7 in which said vertical insert bears at one end against the lower face of the horizontal insert above it, and at the other end against the upper face of the horizontal insert below it.

10. Masonry construction according to claim 7 in which said insert comprises a strip of material of substantially cross or X shape in section, said vertical insert member having its ends tapered to key into the groove of the lower side of the cross or X shaped horizontal insert member above it, and into the upper side of the cross or X shaped horizontal insert member below it, to form a substantially continuous waterproof seal.

11. Masonry construction according to claim 7 in which said insert members of strip material embedded in the binder provide flexible, yielding contact points or ribs in plurality at opposite ends of the binder.

12. A protective insert for masonry or like construction comprising a strip of material of substantially cross or X shape in cross-section adapted to be disposed longitudinally in the binder of a masonry joint, and to provide dual contact points or ribs at each face of the binder to be compressed by the adjacent face of the masonry blocks or other construction to form a seal.

13. A protective insert for masonry or like construction comprising a strip of material of a suitable shape in cross section adapted to be disposed longitudinally in the binder of a masonry joint, and to provide plural contact

points or ribs at each face of the binder to be compressed by adjacent face of the masonry blocks or other construction to form a seal.

14. A protective insert according to claim 13 of material in which reinforcements are provided in the longitudinal grooves to reinforce the body thereof while maintaining the ends of the arms or ribs flexible and yielding.
15. A protective insert according to claim 13 in which reinforcement means are provided extending longitudinally through the mass of the body of the insert and substantially centrally thereof.
16. A plastic joint for masonry according to claim 2, in which said protective insert comprises a strip of material providing a plurality of flexible, yielding contacting projections.
17. A plastic joint for masonry according to claim 2, in which said protective insert comprises a strip of material adapted to be cut to length for insertion in both horizontal and vertical joints.
18. A plastic joint for masonry according to claim 2, in which said protective insert comprises a strip of material of substantially cross or X shape in section, said insert being adapted to automatically assume a position such that two of the longitudinal ribs or projections of the cross or X will be associated with one face of the binder and the other two of the projections of the cross or X will be associated with the other face of the binder.
19. A plastic joint for masonry according to claim 2, in which said protective insert comprises a strip of material of substantially cross or X shape in section, having four longitudinal ribs or projections substantially at right angles to each other, and providing recesses between them, reinforcement means in the recesses, said insert being adapted to automatically assume a position such that two of the longitudinal ribs or projections of the cross or X may be made to lie in spaced apart relation at one face of the binder, while the other two longitudinal ribs or projections may be made to project in spaced apart relation from the opposite face of the binder.
20. A protective insert according to claim 12 of material in which reinforcements are provided in the longitudinal grooves to reinforce the body thereof while maintaining the ends of the arms or ribs flexible and yielding.
21. A protective insert according to claim 12 in which reinforcement means are provided extending longitudinally through the mass of the body of the insert and substantially centrally thereof.

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