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J. W. MUTCH
BUILDING BRICK
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2,192,691

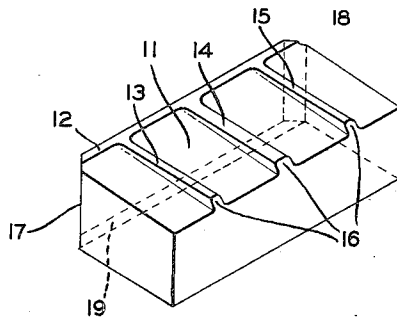


FIG. 1

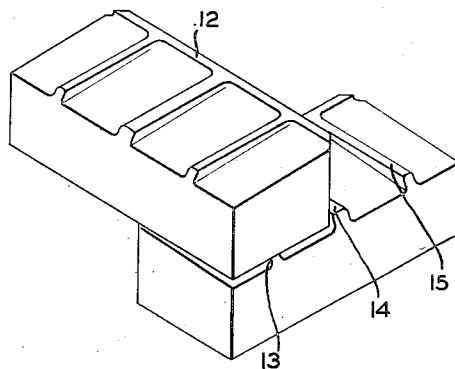


FIG. 2

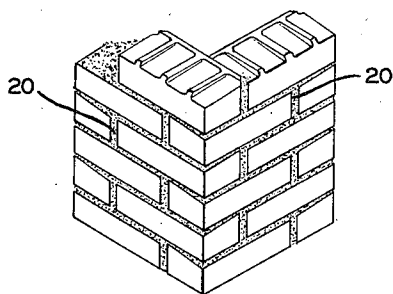


FIG. 3

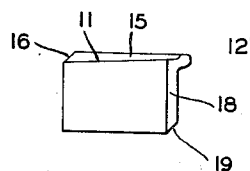


FIG. 4

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BUILDING BRICK

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4 Claims. (Cl. 72--37)

This invention relates to brick wall construction and has particular reference to an improved form of facing brick to be used in connection therewith as an aid in rendering the wall water repellent.

In the art of brick wall construction an ever present problem is that of weatherproofing the completed structure so that it may effectively resist the influx of moisture or water during periods of rain and storm. Serious difficulties have been encountered with present types of brick wall construction because of the porosity of the mortar joints between the courses of brick. Practically all of the water and moisture penetrating through the ordinary brick wall gains its entrance through the joints. Some of this is the result of the natural porosity and absorptive properties of the mortar itself, and the rest may be due to the faulty manner in which the mortar is applied. Inasmuch as it is usually applied by hand, it is practically impossible to avoid the occurrence of crevices and pockets in the mortar through which water may enter. Water seepage is especially severe during periods of wind-driven rain, during which the wind pressure against the wall is often sufficiently high to push considerable water through the mortar joints.

It is a principal object of this invention to provide a brick of novel form which, when laid in a wall, will resist the infiltration of moisture and water through the joints.

A further object is to provide a brick of novel shape which may be laid in the usual manner in either straight or staggered courses, or may be used with other standard types of brick, and which embodies novel drainage features for shedding any water that may collect in the mortar joint between the bricks.

Another object is to provide a novel form of brick which when laid in a wall will present to the weather side a water dam embedded in the mortar substantially parallel to the face of the wall.

A further and more specific object of the invention is to provide a novel brick which by reason of its shape may be stacked vertically, and in which the major portion of its upper surface is sloped upwardly away from the face so that the movement inwardly of water collecting on its upper surface is opposed by the force of gravity.

Other objects and advantages will become apparent from a consideration of the following specification and claims taken in connection with

the accompanying drawing forming a part of this application, in which

Fig. 1 is an isometric view of a brick showing the preferred embodiment of my invention;

Fig. 2 is a view diagrammatically illustrating the relative position of such bricks when arranged in a wall in interlocking or staggered courses;

Fig. 3 is a fragmentary view of a corner section of wall constructed in accordance with the present invention; and

Fig. 4 is a fragmentary view showing a modified form of dam extending along the upper rear edge of the brick.

In the drawing, the brick is shown having a top surface 11 sloping gradually upward away from the front face to a point near the rear edge where the slope increases abruptly to form a raised dam 12 extending along the entire rear edge.

Spacing ridges 13, 14, and 15 extend from the dam 12 forwardly across the upper surface of the brick to the opposite or front edge, three ridges being shown, although fewer or more may be provided. I prefer to construct a central ridge 14 of double width, and on either side single width ridges 13 and 15, spaced slightly nearer the ends of the brick than the center, although, it is to be understood that the number, size and spacing of these ridges may be varied as desired. The top of each ridge and the top of the dam are in a single plane parallel to the base in order to provide extended contacting areas for the under surface of a brick or bricks placed thereon, and to facilitate vertical aligning of the bricks.

A chamfer 16 is made on the forward edge of each ridge so that, when the long side of the brick is faced outward in the wall, the ridges will be completely embedded in the mortar and will not show in the wall face. Chamfers 17 and 18 are provided along the rear vertical edges of the brick, and a chamfer 19 is formed along the lower rear edge. At present, I have found a chamfer of 45° to be the most desirable.

As stated, the infiltration of water and moisture through a brick wall is ordinarily confined principally to the mortar joints. During a wind-driven rain the combination of a sheet of water constantly coursing down the face of the wall and a pressure exerted by the wind is enough to push considerable water through the porous mortar. This water would naturally tend to settle on the upper surface of the brick so that the path of any substantial quantity of water would be across and in contact with the top of the brick.

Since the top surface of the brick, when it is placed broadside forward, slopes upwardly away from the face, the passage of a body of water thereacross is appreciably retarded. I have contemplated nevertheless that with winds of greater than usual velocity the pressure may be sufficient to push considerable water inwardly up the inclined surface of the brick. The dam 12 has thus been provided as an additional safeguard. Relatively speaking, a substantial head of water may accumulate in front of the dam which will exert enough back pressure to prevent the entrance of additional water. Once the driving force of the wind ceases, the water collected in the joint between the bricks will flow outwardly and be shed.

Fig. 3 shows the bricks laid in staggered, interlocking courses to form a wall in which the ends of alternate bricks are included in the face. The dams 12 of the bricks placed end forward in the wall are normal to the wall face and consequently cannot act as a barrier to the infiltration of water. However, ridges 13, 14 and 15 are now parallel to the wall face and the outermost ridge 13, as shown in Fig. 2, forms a dam to stem the incoming water. With the brick in this position, surface 11, and particularly that portion of it in front of ridge 13, no longer sheds water outwardly but, instead, the water flows to the side into vertical joint 20 where it filters downwardly onto the surface of the brick beneath. From the latter surface it is shed outwardly. Should any water be pushed over the top of ridge 13 it will settle in the space between ridges 13 and 14 and drain off on the side. Since the dam formed by ridge 13 lies well forward of the dam 12 on the brick below, any water passing over ridge 13 will drain onto surface 11 of the lower brick in front of its dam.

Fig. 4 shows a modification 12' of the dam 12 of Fig. 1. Dam or ridge 12' extends along the entire rear edge of the block, but is set back so as to overhang the rear face.

The overhanging portion of dam 12' may be used as a lateral spacing guide for an adjacent course of brick in the construction of a multiple course wall. If desired, the brick may be made with the dam extending from the rear face a distance sufficient to contact the forward face of the adjacent brick and, at the same time, provide a space below the dam to receive the quantity of mortar necessary to form a satisfactory bond.

The novel form of brick disclosed and described herein may be arranged, as shown, to form a compact sturdy wall in which the bricks, or portions thereof, are brought into closer relation to the surrounding bricks without materially decreasing the effective bond therebetween, and in which the porous portions thereof are arranged to drain on surfaces which slope outwardly, or which are sloped to drain onto outwardly sloping surfaces. In addition to the drainage provided by the sloping surface of each brick, an additional desirable feature is the provision of dams to check the flow

of water and create a back pressure to hold out additional water.

It will be observed that the ridges formed on the surface of the brick have multiple functions, namely: those of spacing or vertically aligning, supporting, and in certain cases water repelling. It is also to be noted that the combination of water-dam and spacing ridges provides means for checking the flow of water across the surface of the brick in both the longitudinal and transverse directions.

It is obvious, of course, that various modifications in the form of brick shown herein may be made without departing from the spirit or essential attributes of the invention, and therefore I do not desire to be limited to the specific details shown and described.

I claim:

1. A building brick having its upper surface sloped downwardly toward the face, a raised ridge extending longitudinally along the entire rear edge of said upper surface, and a plurality of spaced ridges extending transversely across said upper surface and having one end connected to said longitudinal raised ridge, said ridges having their top surfaces lying in a plane parallel to the base and forming dams to oppose the movement of water across said upper surface.

2. A waterproof building wall structure comprising a plurality of bricks arranged in superimposed courses, said bricks having their upper surfaces sloped to facilitate the drainage of water therefrom and having raised ridges thereon forming dams to oppose the infiltration of water through the joints between said courses, said ridges cooperating with the under surface of the brick immediately above to maintain vertical alignment of the bricks.

3. A building brick including an upper surface sloped downwardly toward the face, and a plurality of raised portions on said upper surface, one or more of said raised portions extending longitudinally across said surface spaced from said face and another or others of said raised portions extending transversely across said surface to form cross-dams for opposing the movement of water along said upper surface, said plurality of raised portions being cooperable with the under surface of a similar brick to enable a plurality of such bricks to be stacked in vertical alignment.

4. A building brick including an upper surface sloped downwardly toward the face, and a plurality of raised portions on said upper surface, one of said raised portions extending longitudinally along the rear edge of said upper surface and overhanging the rear face of the brick and another or others of said raised portions extending transversely across said surface to form cross-dams for opposing the movement of water along said upper surface, said plurality of raised portions being cooperable with the under surface of a similar brick to enable a plurality of such bricks to be stacked in vertical alignment.

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