Oct. 5, 1937. A. K. HITZMAN 2,094,703

MORTAR SPREADER AND PROCESS OF SPREADING MORTAR

Filed May 23, 1936

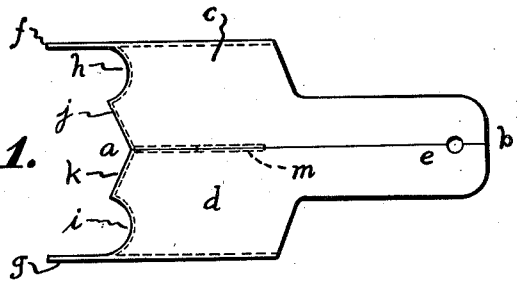


FIG. 1.

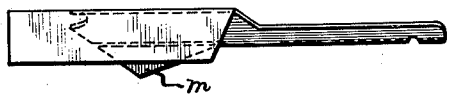


FIG. 2.

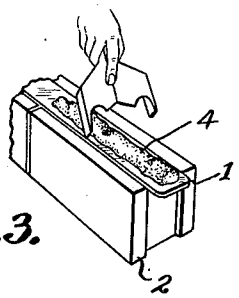


FIG. 3.

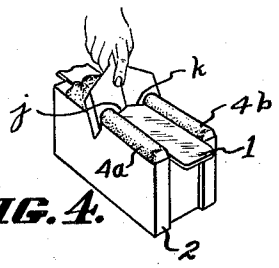


FIG. 4.

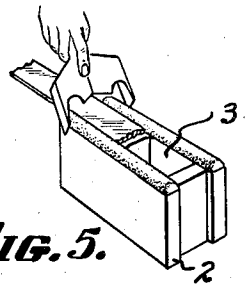


FIG. 5.

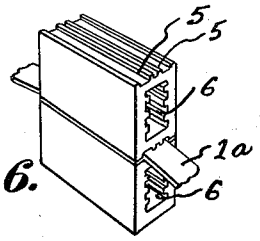


FIG. 6.

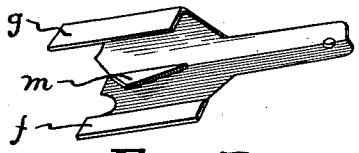


FIG. 7.

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MORTAR SPREADER AND PROCESS OF SPREADING MORTAR

August K. Hitzman, Cincinnati, Ohio

Application May 23, 1936, Serial No. 81,470

2 Claims. (Cl. 72—128)

My invention relates to building construction for which I provide a novel mortar spreading trowel for use with hollow tile, bricks or cinder blocks, and to a novel process for spreading mortar in such construction work which results in improved workmanship.

In the building industry there has of late years been a gradual change from brick laying to the use of hollow tile, brick and cinder blocks. These bricks ordinarily have one or more openings extending between their faces, and in laying mortar between courses of such brick, not only is there a great loss of mortar, due to its falling down through the ventilating and insulating openings, but it is extremely difficult to lay mortar on the horizontal surface of the brick or block in an evenly thick application.

It is an object of my invention to provide a tool which will enable much more rapid application of mortar to the horizontal surface of the building blocks, and which will insure the deposit on the blocks of an even thickness of mortar. It is a further object, by the use of my novel tool, and the process with which it is used, to make a great saving in the amount of mortar which is required, and also in the time which is required to place the mortar on the blocks.

Referring to the drawing in which I have illustrated a preferred type of mortar spreading tool, and also the process involved in connection with mortar spreading with the tool:—

Fig. 1 is a plan view of my new mortar spreading tool.

Fig. 2 is a side elevation of the tool.

Fig. 3 is a perspective view of a block after the application thereto of the strip which seals the openings in the blocks, and with mortar spread thereon.

Fig. 4 shows the block in Fig. 3 during use of the mortar spreader.

Fig. 5 is a view of the block after the use of the spreading tool during removal of the strip.

Fig. 6 is a perspective view of a glazed tile or glass brick after use of the tool with the fiber strip left in place between bricks.

Fig. 7 is a perspective view of the tool.

Referring first to the illustrations of the tool, for durability it is preferably fabricated from a sheet of galvanized steel, the steel blank being bent longitudinally down the middle along the lines indicated at *a*, *b*, so that two sides, *c* and *d* extend at an oblique angle of substantially 135 degrees. The rear part of the tool is cut away to provide the handle *e*. The side edges are bent down as indicated at *f*, *g*, at angles of about 62½ degrees with the sides *c*, *d*.

The sides have curved cut-away portions *h*, *i*, the purpose of which will be subsequently described, and angularly cut end edges *j*, *k*, which form a plow to divert the mortar into position to be spread by the cut-away portions *h*, *i*. To insure use of the tool at a proper angle I preferably weld or solder to the lower face of the tool along the lines *a*, *b*, an angle piece *m*, the front edge of which acts as a guide during use of the tool and prevents rocking of the tool during use with the result of spilling or unevenly distributing the mortar.

Referring to Figs. 3 to 5, 1 represents a strip of thin material, such as metal, which may be laid lengthwise along the face of the tile so as to cover up the openings therein. In Fig. 4 the tool is shown at the ordinary angle of use when spreading the mortar. This angle is such that the plow edges *j*, *k*, together with the front edge of the angle *m*, will lie flush with the top surface of the strip 1. In Figs. 3 to 5, I have shown a tile, brick or block 2, having ventilating and insulating openings 3 extending down through the upper face of the block. In Fig. 3 a pile of mortar is shown in position on the upper surface of the block, the mortar being indicated at 4. In Fig. 5 I have illustrated the manner in which the mortar is spread after the use of the tool, and it will be noted that the mortar is spread in longitudinally extending piles 4*a*, 4*b*, extending along the upper surface of the block.

It will be noted that the mortar is spread in gently sloping piles of even thickness, the spreading in such condition being due to passage of mortar through the circular openings *h*, *i*, of the tool.

In Fig. 4, I have illustrated a perspective view showing how the tool diverts and spreads the mortar in even piles down along the surface of the block, so that when another course is laid on the block it will not be necessary to level off the mortar or the succeeding upper courses of blocks because the thickness of the piles 4*a*, 4*b* is always exactly uniform.

In the use of my novel tool in combination with the strip 1, no mortar is lost by falling down through the openings 3.

As an illustration of the saving in mortar required, in laying four inch tile, ordinarily 27 cu. feet of mortar is required for a thousand blocks. With the use of my novel trowel and strip I have been able to cut this down to about 5 cu. feet,

effecting a saving of 22 cu. feet of mortar for each thousand bricks or blocks laid.

The saving is more remarkable in the smaller tile or blocks because of the great difficulty heretofore encountered in spreading the mortar so as to accomplish or attempt to accomplish the even distribution of the mortar in the manner that the use of my tool practically enforces.

In laying six inch tile ordinarily thirty-three cubic feet of mortar is required per thousand blocks. With the use of my trowel only fourteen cubic feet is required, thus effecting a saving of nineteen cubic feet.

In laying eight-inch bricks or cinder blocks, ordinarily sixty cubic feet of mortar is required for a thousand blocks, and by the use of my trowel only eighteen cubic feet is required, thus effecting a saving of forty-two cubic feet. With a twelve-inch block instead of ninety cubic feet being required per thousand blocks, with my tool only twenty-two cubic feet is needed, thus effecting a saving of sixty-eight cubic feet.

Roughly estimating the saving in mortar required for hollow tile, bricks and blocks, I am conservative in estimating that from one-half to two-thirds of the mortar used can be saved, with a more even distribution, and one which eliminates a great deal of labor on the part of the brick or tile layer.

In the use of tile which do not have the faces provided with vertical openings, but which instead have grooves 5 in the faces and a ventilating opening 6 extending longitudinally through the tile, as shown in Fig. 6, I accomplish a saving by using a thick web of paper 1*a* similar in width and thickness to the metal strip 1, which I may provide in rolls, and instead of removing the strip after the application of the mortar, I leave the strip in position, which prevents filling up the grooves 5 with mortar, and also provides an additional insulation feature.

In glass or glazed tile the application of mortar to form the joints between courses as shown in Fig. 6, has heretofore always been exceedingly difficult because the mortar used becomes so thin after it is applied that it runs out between the cracks of the tile. Consequently, it has, in the past, been necessary to apply wooden wedges between the courses of tile to keep the tile level and to prevent the squeezing out of the mortar which leaves the tile with abutting faces in contact and no bond between them. With the use of a paper or fiber strip between the meeting faces of such tile, and with the use of my new tool to spread the mortar along the edges of the surfaces of the tile, no wooden wedges are required, and the paper strips need not be removed after the mortar has been applied. The strips prevent face to face contact of the tile and eliminate the pressure of one course on another, which causes the mortar to squeeze out.

The paper or fiber strips therefore may be used whether or not the tile have ventilating openings extending across between their surfaces.

A new improved glass block for building purposes has recently been devised which has shown great resistance against crushing strain. This block reduces heat flow, deadens sound, transmits and diffuses light, deflects sun glare, and resists fire. These blocks are packed with a special paper surrounding the blocks, but with the use of my new strips, construction work with such tile can be accomplished without the blocks being prepared other than in their natural form. Thus considerable saving in manufacturing costs can be avoided.

For various sized tile, bricks and blocks, I provide tools in which the space between the downwardly sloping sides *f* and *g*, which guide the tool during its use, is sufficient so that the sides extend down over the edges of the blocks as indicated in Fig. 4. Thus I may have four-inch tools, six-inch tools, eight-inch tools and ten-inch tools, the size depending, of course, on the width of the face of the block which is to be used.

I am familiar with the patent to Ainslie No. 1,780,902 in which it is proposed to lay mortar from a hopper having a gate to determine the level of the mortar laid. I distinguish my invention from that of this patentee in that my tool is an integral trowel-like tool which functions only to distribute mortar after it is laid. Reagan in his Patent No. 1,679,007 provides a mortar distributor which requires the use of a trowel for spreading the mortar in the distributor. My tool distributes only after the mortar is spread. The patents to Giovagnoli No. 1,423,316 and Ormsby 856,363 show gages for use with a trowel. The use of gages in the prior art only accentuates the novelty of my novel tool which actually gages while at the same time accomplishing a spreading action.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A unitary mortar spreader and gager comprising, in combination with a handle and downwardly sloping sides which guide the tool during use, a V-shaped portion formed in the spreader to divert mortar toward the sides thereof, said V-shaped portion having its edges arranged in a plane at an acute angle to the plane of the handle, and an angular member extending in alignment with said edges to steady the tool during use.

2. A method of spreading mortar in hollow block construction work, which consists in applying a strip to the surface of the block which covers the hollow portions, then applying mortar to said surface and said strip, and subsequently spreading and gaging the mortar in a combined spreading and gaging operation so as to form furrows along the strip and spread the mortar in bands extending along the block between the strip and the side edges of the block.

AUGUST K. HITZMAN.