July 22, 1958 M. L. KLEM 2,844,022

BUILDING BRICK

Filed Oct. 5, 1956

FIG. 1

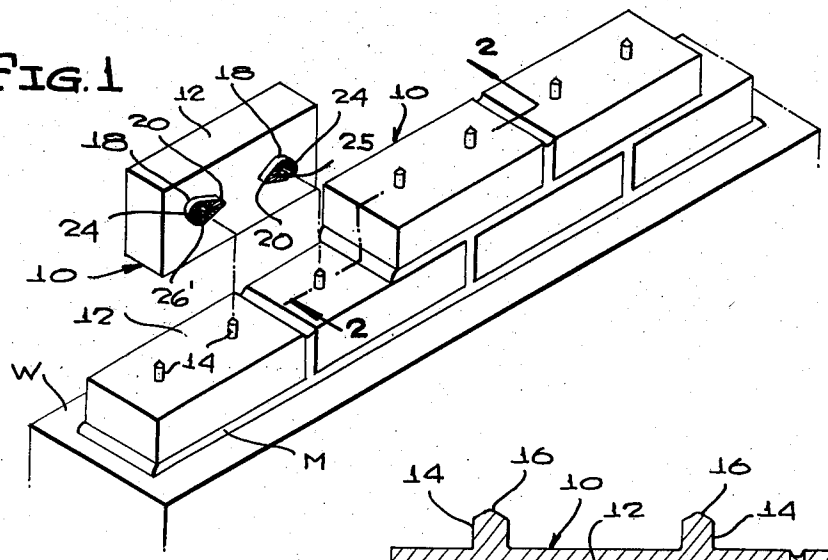


FIG. 2

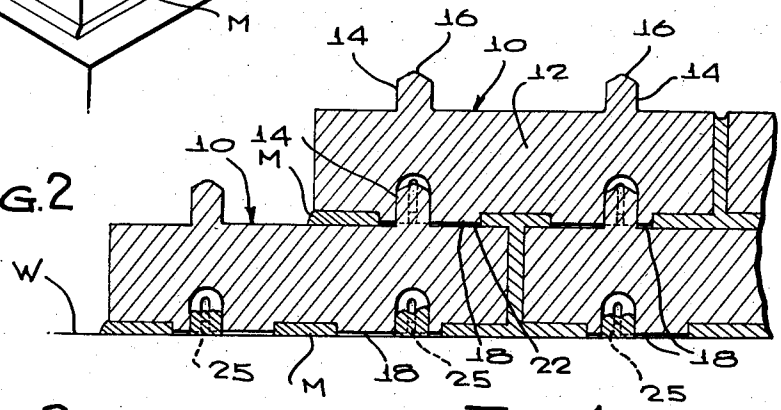


FIG. 3

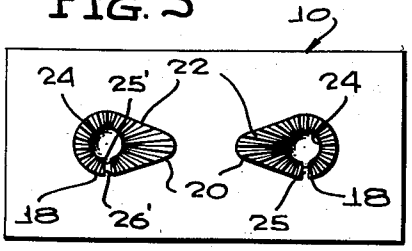


FIG. 4

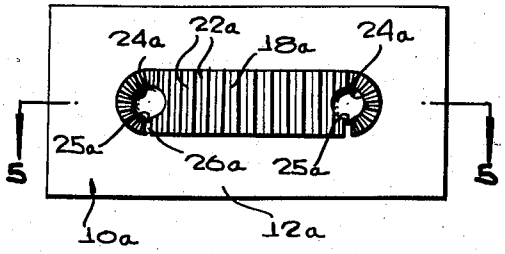
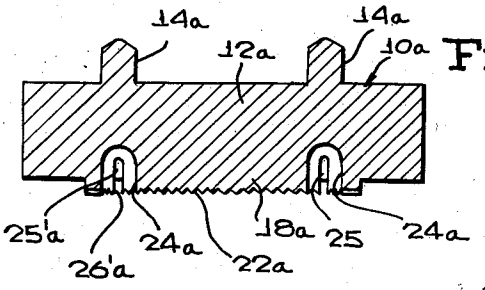


FIG. 5



INVENTOR.
MICHAEL L. KLEM

BY

McMorrow, Berman & Davidson
ATTORNEYS

United States Patent Office 2,844,022 Patented July 22, 1958

2,844,022

BUILDING BRICK

Michael L. Klem, Philadelphia, Pa.

Application October 5, 1956, Serial No. 614,277

1 Claim. (Cl. 72—38)

This invention relates to building bricks, blocks, and the like. More particularly, the invention has reference to a brick so designed as to permit the same to be laid by a relatively unskilled worker.

Most usually, the erection of a brick wall involves considerable skill, when conventional bricks are employed. This is due to the fact that it is necessary that the bricks be maintained in perfect alignment as additional courses are laid, and further, it is exceedingly difficult for an inexperienced person to properly determine the thickness of the mortar courses occurring between the several courses of bricks, it being further difficult to determine the proper thickness of the mortar layer that is to be disposed between adjacent ends of adjacent bricks.

In recent years, there has been a growing tendency for the provision of building materials that are especially designed to permit a relatively unskilled person, such as the ordinary householder, to erect various building structures. The brick constituting the present invention is capable of being laid by such a person, in a manner that will produce a perfectly accurate and properly trued wall. The invention, in this connection, as will presently appear, is adapted for incorporation not only in building bricks, but also in blocks and similar wall components, such as tiles.

In the present invention, the brick is provided with a top face that has upwardly projecting studs or aligning pins, spaced apart upon the longitudinal median of the brick. On the opposite face of the brick one or more raised portions are formed, having serrated surfaces particularly formed to insure a strong bond between bricks. Formed in the raised portion or portions are openings adapted to receive the pins or studs of a brick or bricks of the next lower course.

In conformance with that set forth, an object of invention is to provide a brick of the character involved which incorporates projecting studs or aligning pins on one side thereof for receiving thereon apertured spacing collars on the undersurface of an overlying juxtaposed course of brick, a passage portion or indentation in communication with the apertured portions of the brick permitting the free and ready escape of air and excess mortar therethrough thus permitting the ready receipt of the studs or aligning pins in said apertures without interference of accumulated mortar therein.

Another object of importance is to provide a building brick of the character described which will be so designed as to provide an improved means for predetermining the height of the space within which the mortar bond will be disposed, so as to eliminate the necessity of the worker endeavoring to ascertain what is the proper thickness of the mortar bond. As previously noted, the invention is designed particularly for use by relatively unskilled workers, and in this way, the thickness of the mortar bond will always be accurately prescribed, by the shapes of the bricks of superposed courses.

Another object is to so design the shoulders or raised portions as to cause the serrations thereof to define a

plurality of intervening grooves or interstices, which extend in different directions, so as to insure against slippage of the brick in any direction and so as, further, to insure that mortar will be free to flow in various directions within the grooves to avoid accumulations of excess mortar at any particular location upon the face of the brick, and to insure that the mortar will set in the various grooves, to provide a particularly strong bond between superposed bricks.

Another object is to provide a brick of the character described that will have the shoulder portions so shaped as to provide maximum support for one brick upon a brick or bricks of the next lower course, thereby to produce a particularly strong, accurately trued wall.

A further object of importance is to form a brick of the interlocking type that will be designed to be interfitted or interengaged with adjacent bricks with maximum ease and speed, with the complete wall being erected with full accuracy, and with proper horizontal and vertical mortar bonds, after the lowermost course has been accurately laid.

Still another object is to provide a brick as stated which will achieve the several benefits described above, while still being capable of manufacture at a cost little greater than that required for bricks not having the characteristics of the improved construction.

Other objects will appear from the following description, the claim appended thereto, and from the annexed drawing, in which like reference characters designate like parts throughout the several views, and wherein:

Figure 1 is a perspective view, partially exploded, of a wall during the course of its erection by the use of bricks made according to the present invention;

Figure 2 is an enlarged, fragmentary longitudinal sectional view substantially on line 2—2 of Figure 1;

Figure 3 is a bottom plan view, on the same scale as Figure 2, of one of the bricks per se;

Figure 4 is a view similar to Figure 3 showing a modified form of the brick; and

Figure 5 is a longitudinal sectional view on line 5—5 of Figure 4, on the same scale as Figure 4.

Referring to the drawings in detail, designated at W is a foundation wall, which may be of poured concrete, etc.

The brick constituting the present invention has been generally designated at **10**. At this point, it will be noted that although the invention has been shown, in the illustrated example, applied to a brick, it could be applied with equal facility to building tiles, building blocks, etc. In this instance, the size, material, and outer configuraton of the brick, tile, or block would quite possibly differ from that shown in the illustrated example, but the essential features of the invention would be retained. Accordingly, wherever the term "brick" is used hereinafter in the description and claims, it will be understood that it is intended to encompass various other masonry components, such as building blocks and tiles.

In any event, the brick **10** includes a rectangular, elongated body **12**, having a top surface on which are integrally formed longitudinally spaced, vertically extending studs or pins **14** having shallowly conical or rounded tips **16**. The pins **14** in the illustrated example are two in number for each brick, but the number could be increased if desired. As illustrated, the pins are disposed upon the longitudinal median of the brick, and are spaced inwardly predetermined distances from the ends of the bricks. The distance between the two pins of a brick would be greater than the total of the distances between the pins and the adjacent ends of the bricks, by the thickness of a mortar bond, thus to permit the bricks to be laid in staggered relation during the laying up of superposed courses, in an interlocking arrangement that will assure

vertical mortar bonds of a predetermined thickness between adjacent bricks of the course.

Integrally formed upon the underside of each brick are shoulders **18**, these being spaced apart longitudinally and centrally of the brick correspondingly to the pins formed upon the opposite face thereof. As shown in Figures 1 and 3 to particular advantage, the shoulders **18** are oppositely but identically formed, and include semi-circular outer end portions merging into tapering inner end portions **20**. The purpose of elongating the shoulders in the manner described is to provide for a maximum support surface for the bricks of superposed courses, thus to provide a particularly strong wall erected through the use of the bricks.

In the surface of the shoulders, serrations are formed, defining grooves **22** radiating from deep recesses **24** that are formed in the shoulders in concentric relation to the semi-circular portions of the shoulders. By extending the grooves radially of the recesses **24**, it will be seen that the grooves extend in a large number of directions, thereby to provide pathways through which excess mortar may flow out of the recesses to the spaces surrounding the shoulders, with the mortar being free to flow within the grooves in all directions from the recesses. Further, when the mortar is set, it bonds in the various grooves, so as to provide a highly effective interlock, particularly by reason of the fact that the mortar setting in the grooves extends in a plurality of directions.

Extending radially through the shoulders **18** and the length of the recesses **24** are passage portions **25** which extend through the exterior of said shoulders and provide means whereby excess mortar and air bubbles may readily move radially from the recesses **24** permitting the ready insertion of the studs or pins **14** into said recesses. In this regard, if desired, instead of incorporating passage **25** extending the entire length of the recess **24** the means for permitting movement of excess mortar and air from the recess **24** may encompass a groove **25'** extending the entire length at the inner periphery of a recess **24**, see Figure 1 and the left-hand portion of Figure 3, said groove communicating with one of the radiating grooves the lower surface of the shoulders **18**, this groove being identified in Figure 3 at **26'**.

In any event, when laying up a wall, one first provides a bed of mortar upon the foundation wall W, and lays the lowermost course of bricks upon the bed of mortar M. In laying the lowermost course, it is essential, as will be obvious, that the bricks be carefully and accurately laid, that is, be properly aligned and spaced.

Thereafter, however, the laying of additional, higher courses requires a minimum amount of skill, since the bricks of adjacent courses will interengage in a manner to assure that the bricks of each course will be properly laid relative to the bricks of the next lower course. Further, the shoulders are of a thickness equal to the predetermined thickness of the horizontal mortar bonds between superposed courses, so that there is no possibility of the worker, through a lack of experience or care, forming a mortar bond either too thick or too thin, or, perhaps, of non-uniform thickness along the length of the course.

It will be seen that with the lowermost course laid, one need merely trowel a quantity of mortar onto the course, after which the next course is laid by disposing the bricks of said next course in staggered relation to the bricks of the course immediately below the same. As the bricks of the next or higher course are laid, their recesses will receive the pins **14** of the bricks of the lower course, with the two recesses of each brick of the higher course receiving adjacent pins of two bricks of the lower course.

Further, since the shoulders of the bricks of the higher course will bear against the top surfaces of the bricks of the lower course, the mortar bond between the two courses will be predetermined as to thickness, without possibility

of a lack of uniformity in the thickness of the bond resulting from the inexperience of the worker.

Still further, the positioning of the bricks of the higher course upon the pins of the bricks of the lower course will cause the bricks of the highr course to be properly spaced apart at their ends, thus to insure that the vertical mortar bonds will be accurately provided.

In Figures 4 and 5, there is shown a modified brick generally designated **10*a*** including a body **12*a*** having upwardly projecting, longitudinally and centrally located pins **14*a*** similar to the pins **14** of the first form. The underside of the body is formed in this instance with a single shoulder **18*a***, which is of elongated formation, and extends upon the longitudinal median of the body. At its ends, shoulder **18*a*** has semi-circular end portions, and concentric with the end portions are recesses **24*a*** formed in the ends of the shoulder **18*a*** and extending inwardly a distance well beyond the plane of the surface of the brick on which the shoulder is formed.

The entire area of the shoulder **18*a*** is formed with serrations defining grooves **22*a***. It will be noted, in this regard, that at the ends of the shoulder **18*a***, the grooves radiate from the recesses **24*a***, but for the whole distance between the center points of recesses **24*a***, the surface of the shoulder **18*a*** is formed with transverse grooves perpendicular to the length of the shoulder.

As in the previously disclosed embodiment shown in Figures 1 through 3 inclusive, the recesses **24*a*** may have extending radially therethrough the entire length thereof passage portions **25*a***, see the left-hand side of Figure 4, for example, this passage communicating the recesses **24*a*** with the exterior of the shoulder **18*a*** and accordingly providing means for relieving the accumulated mortar or air bubbles trapped in the recess **24*a***. Furthermore, in this regard, instead of incorporating a passage **25*a*** extending entirely therethrough, the recesses **24*a*** may incoporate on the inner periphery thereof extending the entire length of said recesses an elongated groove **25*a'*** in communication with one of the serrations defining the grooves, this groove being indicated at **26*a'***.

The brick is used exactly as in the first form of the invention, as will be readily apparent, and provides for a maximum amount of support for the bricks of superposed courses. At the same time, there is still ample room surrounding each shoulder **18*a*** for the mortar M, thus to provide for a strong mortar bond between the superposed courses of bricks.

Of course, the bricks would include corner bricks, not shown, this being considered sufficiently obvious as not to require special illustration. Said corner bricks would be formed with serrated shoulders, pins, and the other features of the invention as illustrated and described herein.

It is believed apparent that the invention is not necessarily confined to the specific use or uses thereof described above, since it may be utilized for any purpose to which it may be suited. Nor is the invention to be necessarily limited to the specific construction illustrated and described, since such construction is only intended to be illustrative of the principles, it being considered that the invention comprehends any minor change in construction that may be permitted within the scope of the appended claim.

What is claimed is:

A brick comprising a rectangular, elongated body having a top surface, a pair of vertically extending pins integrally formed on the top surface of the body at locations spaced longitudinally of the body upon the longitudinal median line thereof, said pins being spaced inwardly from the ends of the body equal, predetermined distances, the distance between the two pins of the body exceeding the total of the distances between the pins and the adjacent ends of the body by a predetermined extent approximating the thickness of a mortar bond; and shoulder means integrally formed upon the under

surface of the body and extending longitudinally of the body upon the longitudinal median line thereof, said means having in its surface a series of serrations defining grooves, said shoulder means having deep recesses and said grooves radiating from the recesses, the shoulders having passage portions extending radially from the recesses through the shoulders and also extending a substantial part at least of the length of the recesses in the walls of the recesses, the recesses being spaced apart correspondingly to the spacing of the pins with the length of each pin being aligned with the length of a corresponding recess, the pins being shorter in length than the length of the recesses and being generally coextensive in length with the parts of the passage portions that extend lengthwise of the recesses.

References Cited in the file of this patent

UNITED STATES PATENTS

752,669	Guzowski	Feb. 23, 1904
2,241,079	Whitten	May 6, 1941
2,321,403	McCabe	June 8, 1943

FOREIGN PATENTS

107,338	Great Britain	June 28, 1917
778,582	France	Dec. 22, 1934
570,967	Great Britain	July 31, 1945
447,721	Italy	Apr. 28, 1949