March 22. 1932. G. B. KISSINGER 1,850,884

BRICK

Filed March 15, 1930

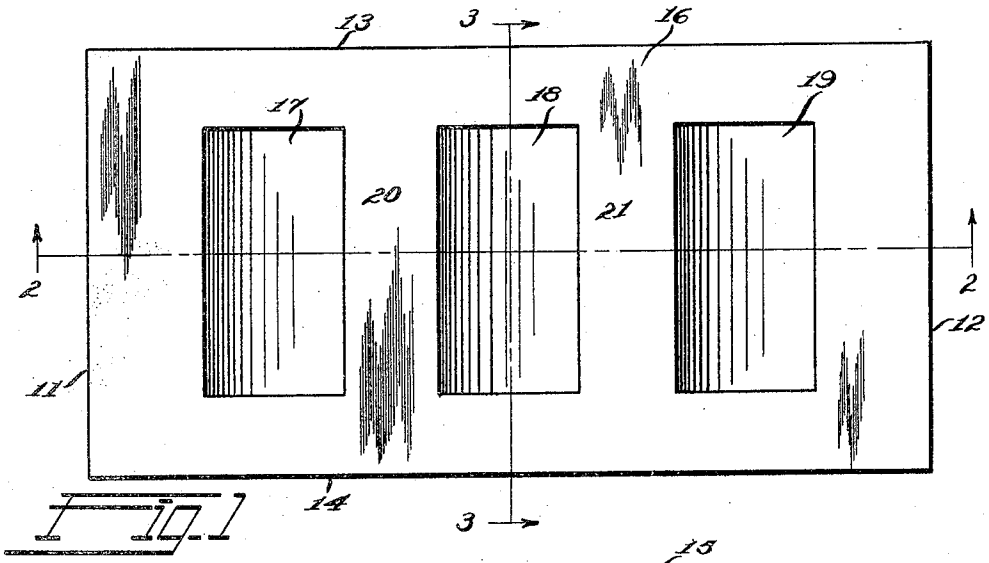


FIG. 1

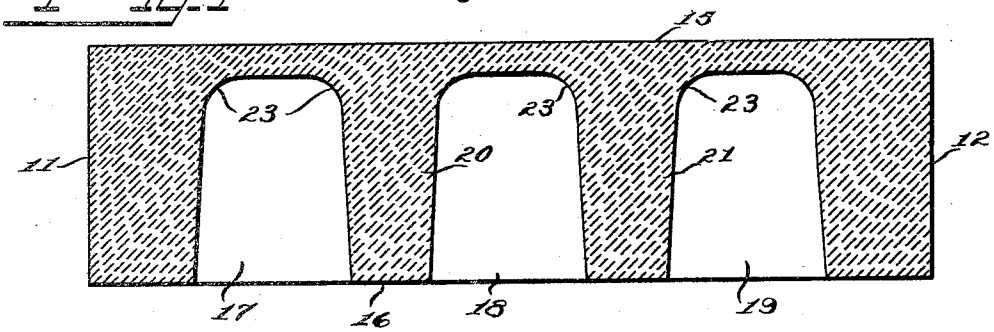


FIG. 2

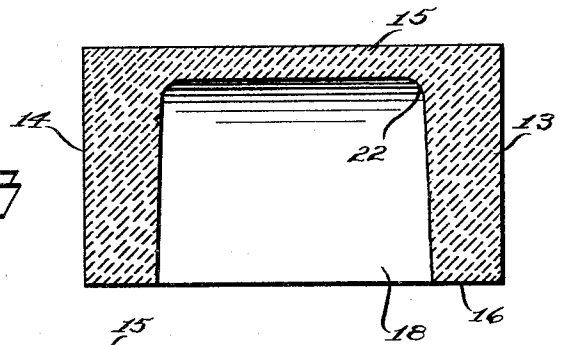


FIG. 3

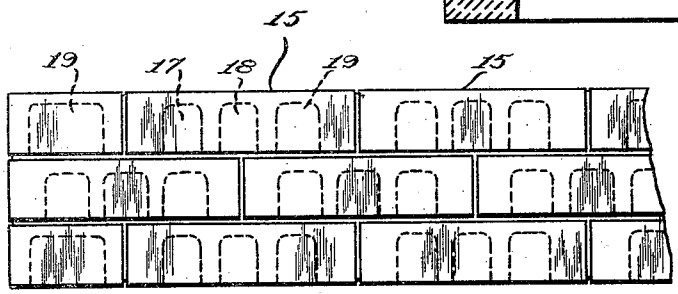


FIG. 4

Inventor
George B. Kissinger

Strauch & Hoffman
Attorneys

Patented Mar. 22, 1932 1,850,884

UNITED STATES PATENT OFFICE

GEORGE B. KISSINGER, OF TAKOMA PARK, MARYLAND

BRICK

Application filed March 15, 1930. Serial No. 436,184.

This invention relates to building brick of the kind disclosed in my application Serial No. 384,144 of which application this case is a continuation in part.

The primary object of the invention is to provide a building brick of improved construction, possessing many desirable characteristics not present in bricks as now generally constructed, although the brick of this invention may be produced at substantially less cost than ordinary brick now in common use.

A further object of the invention is to provide a brick that may be laid with the same facility as an ordinary brick, though it is of a hollow construction.

A further object of the invention is to provide a brick that may be laid with the same facility as an ordinary brick but that will provide a mortar lock thereby increasing the rigidity of the wall.

A still further object of the invention is to provide a brick of improved formation, that may be laid with the same facility as ordinary brick, but that will result in a wall that is substantially damp-proof.

A still further object of the invention is to provide a brick of hollow form, and of lesser weight than a solid brick but that has substantially the same strength as an ordinary solid brick.

Further objects of the invention reside in the provision of a brick that is capable of being easily cut or broken, that provides a full length bearing when used in wall constructions, that is capable of being more cheaply transported in view of its lighter weight, and that is inherently of such construction that enables it to be readily used as an anchorage for bonding or tying elements of a composite brick and concrete or similar plastic construction.

Further objects of the invention will appear as a description thereof proceeds, with reference to the accompanying drawings in which:

Figure 1 is a plan view of an improved brick of this invention.

Figure 2 is a longitudinal section taken on the plane indicated by the line 2—2 of Figure 1.

Figure 3 is a transverse section taken in the plane indicated by the line 3—3 of Figure 1.

Figure 4 is a fragmental view of a portion of a wall formed of the brick of this invention showing the preferred manner of use of the invention.

Like reference characters indicate like parts throughout the several figures.

The improved brick of this invention is constructed preferably of the usual materials in the form of a parallelopiped, five sides of which constitute uninterrupted plane surfaces. The ends of the brick are designated by the numerals 11 and 12, the sides by the numerals 13 and 14. As clearly indicated on the drawings, these sides are uninterrupted plane surfaces as is customary in ordinary solid brick. The top bearing face of the brick, that is when the brick is used in the preferred way, is designated by the numeral 16, and, as indicated in the drawings, said surface likewise constitutes an uninterrupted plane surface as is in ordinary brick. The bearing surface that constitutes the under-side of the brick, when it is used in the preferred manner, is designated by the numeral 16. The brick is hollowed out to produce a light construction, that may be manufactured at lower cost, because of the lesser amount of material required, by forming recesses of substantial depth from the bearing face 16, just referred to.

Such recesses may be made in any number, as may be deemed desirable. Preferably three such recesses are provided such as designated by the numerals 17, 18 and 19, the recesses extend into the body of the brick to a point, at least, as deep as a plane paralleling the bearing faces 15 and 16 and passing through the center of the brick, and preferably, substantially beyond this point. As indicated in the drawing such recesses may have a depth substantially six-sevenths of the entire dimension of the brick measured in the direction of the recesses.

The recesses are so formed that the dividing walls 20 and 21 between the recesses are preferably maintained of sufficient thickness to provide transversely extending ribs of sub-

stantial strength extending across the body of the brick through the central portion thereof and serving to assist in supporting the load on the brick. The recesses 17, 18 and 19 are also so formed as to provide substantial bearing surfaces around the edges of the brick so that the strength of the brick is not substantially lessened by the formation of the recesses just referred to and to provide relatively wide bearing surfaces completely around the brick.

Preferably the corners of the recesses formed in the brick are suitably rounded, as indicated at 22 and 23 of the drawings, producing in effect arches that serve to rigidly support the top bearing face of the units when the bricks are put in use.

The brick is, preferably, hollowed out from one of the bearing surfaces for convenience in manufacture, though it should be understood that if deemed desirable, the recesses may be formed from any face of the brick. The recesses are preferably formed as shown in the drawings so that the sides thereof are slightly tapered. If desired, they may be substantially tapered, curved, or formed in any approved manner.

The brick just described is used in the manner illustrated in Figure 4, which shows a number of the bricks in usual superposed arrangement. It will be observed that the plane and uninterrupted bearing face 15 is disposed upwardly, and that the recesses open from the under bearing face of the brick, as clearly illustrated in dotted lines in this figure. Inasmuch as the plane bearing face is presented upwardly, it will be readily understood that the bricks are laid in precisely the same manner as an ordinary brick now in common use, the top or bearing surfaces providing the usual surface upon which the bricklayer spreads the mortar in the usual manner. It will be observed that when the bricks are placed upon the mortar that the settling of the bricks on the mortar will cause a portion of the latter to enter the bottom of the recesses 17, 18 and 19 serving to provide an interlock between the bricks and the layer of mortar. The wall thus formed is of substantially less weight than a wall formed of ordinary solid bricks. It has improved damp-proof characteristics, and at the same time the strength of the wall is not materially less than that of a wall formed of ordinary bricks, because of the manner in which the hollow recesses are formed therein.

The wall thus formed includes a multiplicity of dead air spaces providing substantial insulation from both heat and cold, so that buildings constructed from the improved brick of this invention are cooler and more comfortable in summer and are more readily heated in winter.

The recesses in the brick are formed in such manner that the brick may be manufactured with the same speed of ordinary brick, but at a reduced cost in view of the reduction in amount of material, and the saving of time necessary to burn or dry the brick with the consequent conservation of fuel. To this end the recesses are of sufficient length and width to enable this to be done, the length of each recess measured in a direction parallel to the ends of the brick being more than one-half the width of the brick, while the width of each recess is approximately one-sixth of the length of the brick as shown on the drawings. That is, each recess preferably has a cubical content approximating one-twelfth of the cubical displacement of the whole brick and the cubical content of the three recesses approximates one-fourth of the displacement of the whole brick. The bricks also may be transported at lower cost because of their lowered weight.

The recesses in the brick just described, may be used to anchor bonding or tying elements, such elements being provided in this event with portions that may be disposed between the layers of bricks and project upwardly into the recesses just referred to. If desired, the brick of this application may also be used conveniently to form a composite brick and concrete wall. That is, a wall in which a form for the concrete is in effect, produced by outer and inner spaced walls of a thickness of a single brick. In using the brick of this invention in this way certain of the recessed bricks may be inverted so that the recesses therein opening upwardly and bonding or tying elements may be provided of a form that include projections that may extend in the recesses that may in this event, be filled with mortar to firmly interlock the bonding or tying elements in the brick. The composite wall is, of course, completed by filling the space between the outer and inner brick wall with concrete surrounding the bonding and tying elements just referred to.

The brick of the present invention is hollowed out from one face to the approximate degree above stated because it has been found to represent a maximum degree of reduction in weight of the brick without sacrificing the strength thereof, when made as described or illustrated. The brick is not weakened in spite of its lower weight and may be satisfactorily substituted for ordinary or solid brick.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiment is therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all changes which come within the meaning and

range of equivalency of the claims are therefore intended to be embraced therein.

What I claim and desire to secure by U. S. Letters Patent is:—

1. A brick made of burned fire clay, shale or surface clay in the form of a parallelopiped five sides of which are uninterrupted plane surfaces, said brick being provided with a plurality of relatively wide and long recesses formed from the sixth side which is the bearing face of the brick to a depth extending at least to the plane parallel to said bearing face that passes through the center of the brick so that the cubical content of the recesses approximates one-fourth of the cubical displacement of the brick and so that the surface area exposed to the burning action is enlarged, the sides of said recesses being slightly tapered and the corners on the interior of the brick being rounded so that the walls defining said recesses simulate arches.

2. A brick made of burned fire-clay, shale, or surface clay, in the form of a parallelopiped five sides of which are uninterrupted plane surfaces, said brick being hollowed out from the sixth side, which is a bearing face of the brick, to the extent of approximately one-fourth of the cubical displacement of the brick and to a depth of at least the plane parallel to said bearing face that passes through the center of the brick, whereby the surface area of the brick exposed to the burning action is enlarged.

In testimony whereof I affix my signature

GEO. B. KISSINGER.