J. P. WILLIAMS.

BUILDING BRICK.

APPLICATION FILED JULY 1, 1920.

1,404,823. Patented Jan. 31, 1922.

Fig. 1.

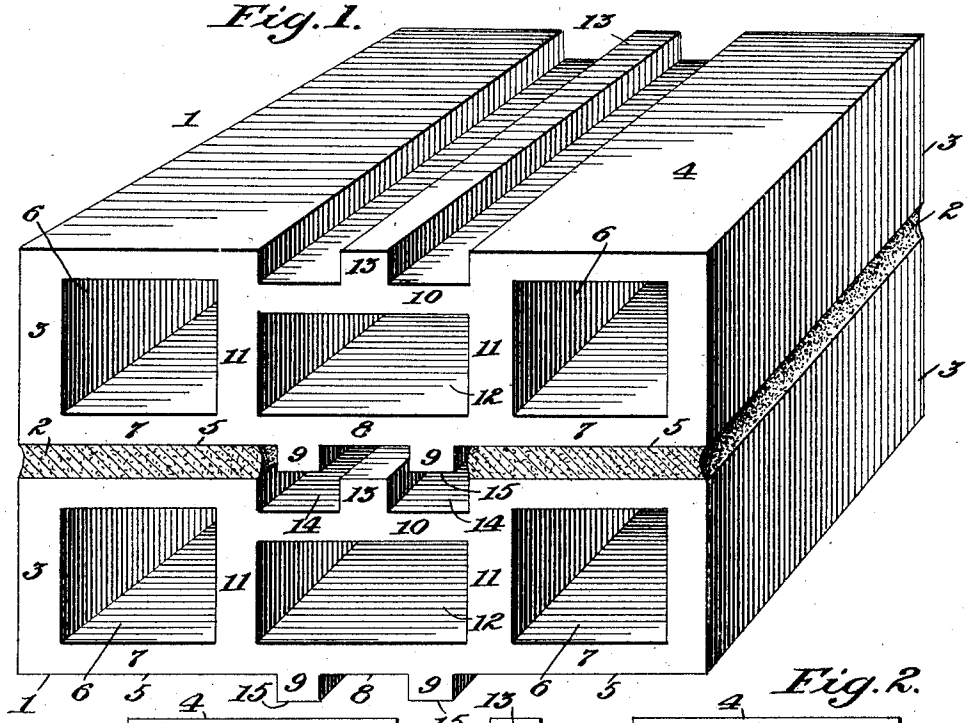
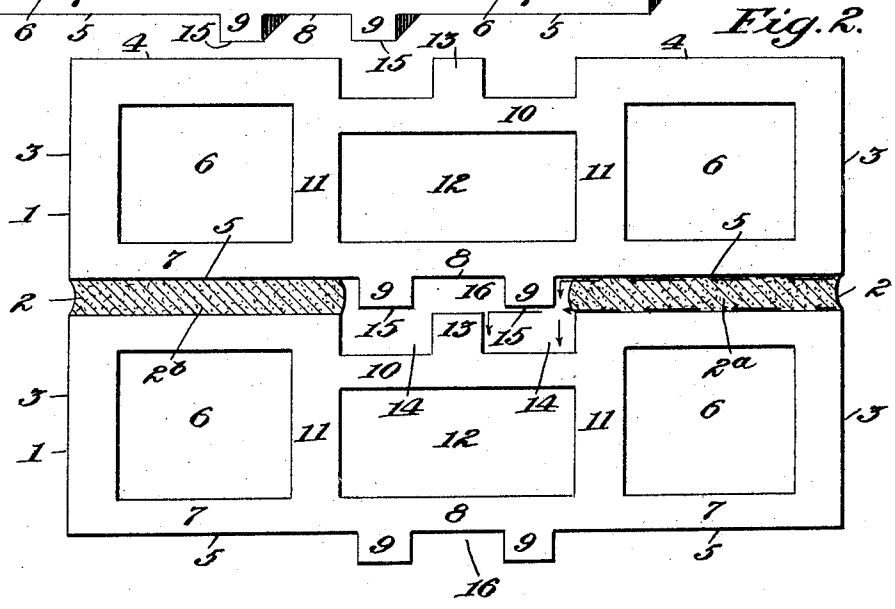


Fig. 2.



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UNITED STATES PATENT OFFICE.

JAMES P. WILLIAMS, OF MILTON, PENNSYLVANIA.

BUILDING BRICK.

1,404,823. Specification of Letters Patent. Patented Jan. 31, 1922.

Application filed July 1, 1920. Serial No. 393,318.

To all whom it may concern:

Be it known that I, JAMES P. WILLIAMS, a citizen of the United States, residing at Milton, in the county of Northumberland and State of Pennsylvania, have invented certain new and useful Improvements in Building Bricks, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to building bricks; it has more especial reference to what is generally known in the art as "air-cell bricks" or "one-handed bricks;" and it comprehends a wall-structure built of these bricks as well as the brick itself.

The primary object of the invention is to present a building-brick of cellular form but possessing maximum strength and capable of being conveniently and economically manufactured and provided with effective means (both in its upper and in its lower portions) for arresting the progress of any moisture which may seep through the wall-structure.

It is also a primary object within the contemplation of the invention to provide a brick which includes a plurality of air-cells and, also, means disposed intermediate of its outer side-faces for catching or arresting moisture which may have seeped through the mortar-joint—either along the top or bottom surfaces of the brick—and, also, means for receiving and conveying such moisture away.

A further object contemplates the utilization of one of such moisture-catching means as a convenient hand-hold that serves as a helpful instrumentality for grasping the brick in the handling of the same.

The invention has other objects, of more or less importance and advantage, all as will herein be made apparent.

That the invention may be readily understood in its different aspects, I have shown the same in the accompanying drawings; but these are to be understood as merely illustrative of a preferred and practical embodiment of the invention and as indicating that the invention is susceptible of a wide range of modification and variation without departing from its spirit or sacrificing any of its salient features or underlying principles.

In these drawings:

Fig. 1 is a view in perspective of two of the bricks arranged in superposed relation; and

Fig. 2 is a view in front elevation of the same and showing, by arrows, the direction of travel of whatever moisture that seeps through the mortar-joint.

Referring to these drawings, the reference-numeral 1 designates, in general, one of my improved one-handed bricks. In Fig. 2, two of these bricks are shown, one superposed upon the other and separated by mortar 2, as usual.

Each of these bricks, preferably and as shown, includes two load-sustaining portions or side-members 3—3. The bricks are rectangular in form and conform to the dimensions of a standard building-tile. The side-members are so formed as to have their upper surfaces 4 and their lower surfaces 5, respectively, lying in common planes. That is to say, the upper surfaces 4 of the two side-members are disposed in the same horizontal plane. Likewise, the lower surfaces 5 of the members are disposed in a horizontal plane common to both.

Each load-sustaining side-member is formed with a longitudinally-extending air-cell 6 which may be of any required form and dimension but, in this instance, shown as approximately square in cross-section. These cells extend the length of the brick and provide two of a plurality of air-conduits for each brick.

Alining with and joined to the base-portions 7 of each side-member is a base-web 8. This spaces the two side-members apart and at the same time connects them together to make an integral structure.

Depending from the base-web are a pair of spaced-apart, longitudinally-extending lugs or pendants 9, 9, the function of which will herein be more particularly explained presently.

Overlying the base-web is a top-web 10 which connects with and joins the upper portions of the side-members. It occupies a position in substantially parallelism with the base-web and with this and the side-walls 11 of the load-sustaining members forms a central air-cell 12.

Upstanding from the top-web is a central web or lug 13. This occupies a position between the vertical plane of the drip-lugs. Preferably and as shown, the upper surface

of this web lies in a plane common to that of the upper surfaces of the load-sustaining members. Between each member and the central web is formed a moisture-receiving channel or recess 14, there being, thus, two of these.

For wall and similar construction-work, the bricks are preferably to be superposed one upon another, as shown in Figs. 1 and 2, a layer of mortar 2 being laid upon the upper surfaces of each of the load-sustaining members. As thus aggrouped, the load-sustaining members occupy a position one above another, with two bodies of mortar spacing them apart; the drip-lugs have their lower surfaces 15 lying somewhat above the plane of the upper surfaces of the side-members; and the central web occupies a position between the drip-lugs. Thus, the central lug or web coincides with a channel 16 existing between the drip-lugs, while the drip-lugs coincide with the channels 14. By reason of this related position of the lugs to the channels and the out-of-touch arrangement, the lugs function to break the continuity of the mortar-joint and, also, to arrest or catch any moisture that may have seeped through the mortar-joint, and they then precipitate such moisture into the channels 14 where it is carried off or evaporated by the air flowing through the air-channels. The drip-lugs are so disposed in relation to each other and become so related to the upper portions of the load-sustaining members (when the bricks are aggrouped) that they are independent thereof and preclude any moisture —which may have penetrated through the outer mass 2^a of the mortar—from bridging or reaching the inner mass 2^b of mortar, the drip-lugs and the central web constituting three separated barriers intervening between the two bodies (2^a and 2^b) of mortar; whereas the space, channel or chamber 17 formed between the inner wall of each of the side-members, the proximate drip-lug, and the central lug constitutes an air-space or channel in which moisture is trapped and evaporated or otherwise disposed of.

By reason of the fact that the web 13 is centrally arranged and in balanced relation to the load-sustaining members, it may be utilized as a hand-hold, whereby the brick may be conveniently handled with one hand. It is to be understood, however, that it is not an essential feature of the structure that this central web shall be formed as or utilized for a hand-hold.

From the foregoing, it will be perceived that I have, by this structure, provided a new article of manufacture in the form of a three-cell building-brick of standard size and of maximum load-carrying capacity having mortar-joint breaking lugs or webs at its upper and lower portions, those on the lower surface extending below the plane thereof and normally occupying a spaced-apart moisture-catching relation to the hand-hold lug on the underlying brick.

My structure is to be distinguished from the so-called "lock-bricks" which have, on their lower surfaces, longitudinally-extending, spaced-apart lugs which are adapted to seat in recesses or channels formed in the upper part of an underlying brick. In these instances, the lugs are in contact with the upper portions of the brick; whereas, in my construction, the drip-lugs, in order to perform their ascribed function, are entirely out of contact with any portion of the underlying brick. Moreover, in these other bricks in the art, there is a base-web but no longitudinally-extending web upstanding from an upper web, as in my construction.

What I claim is:

1. A "one-handed" building-brick comprising side load-sustaining members, hollow throughout their length and having upper and lower mortar-contacting surfaces; a base-web connecting the members at their lower portions; a top-web connecting the members adjacent their upper portions and disposed in a plane below the upper mortar-contacting surfaces of the members; drip-webs depending from the base-web in spaced relationship from the load-sustaining members; and a central mortar-joint-breaking web upstanding from the top-web; the upper mortar-contacting surface of each of the members and of the joint-breaking web being in the same common plane, and the lower faces of the drip-webs being below the plane of the lower mortar-contacting surfaces of the side members.

2. A one-handed building-brick comprising two side load-sustaining members, hollow throughout their length to provide air-cells, and having upper and lower mortar-contacting surfaces and inside and outside walls disposed substantially perpendicularly thereto; a base-web connecting the members at their lower portions; a top-web connecting the members at their upper portions and disposed in a plane below the upper mortar-contacting surfaces of the members; drip-webs depending from the base-web intermediate the inside walls of the load-sustaining members and spaced therefrom; a central mortar-joint-breaking web upstanding from the top-web; the upper mortar-contacting surfaces of each of the members and the upper face of the joint-breaking web being in the same common plane; the lower faces of the drip-webs being below the plane of the lower mortar-contacting surfaces of the side members; the top and base-webs and the inner walls of the side members forming a closed air-cell between the members; and a plurality

of moisture-receiving channels formed at opposite sides of the joint-breaking web.

3. A one-handed building-brick comprising two side load-sustaining members, hollow throughout their length to provide air-cells, and having upper and lower mortar-contacting surfaces, and inside and outside walls disposed substantially perpendicularly thereto; a base-web connecting the members at their lower portions; a top-web connecting the members at their upper portions and disposed in a plane below the upper mortar-contacting surfaces of the members; drip-webs depending from the base-web in spaced relationship from the load-sustaining members; a central mortar-joint-breaking web upstanding from the top-web; the upper mortar-contacting surfaces of each of the members and the upper face of the joint-breaking web being in the same common plane; the lower faces of the drip-webs being below the plane of the lower mortar-contacting surfaces of the side members; the top and base-webs and the inner walls of moisture-receiving the side members forming a closed air-cell between the members; and a plurality of channels formed at opposite sides of the joint-breaking web, said channels being of a width greater than that of the joint-breaking web.

4. A one-handed building-brick comprising two side load-sustaining members, hollow throughout their length to provide air-cells, and having upper and lower mortar-contacting surfaces and inside and outside walls disposed substantially perpendicularly thereto; a base-web connecting the members at their lower portions; a top-web connecting the members at their upper portions and disposed in a plane below the upper mortar-contacting surfaces of the members; drip-webs depending from the base-web in spaced relationship from the load-sustaining members; a central mortar-joint-breaking web upstanding from the top-web; the upper mortar-contacting surfaces of each of the members and the upper face of the joint-breaking web being in the same common plane; the lower faces of the drip-webs being below the plane of the lower mortar-contacting surfaces of the side members; the top and base-webs and the inner walls of the side members forming a closed air-cell between the members; and a plurality of moisture-receiving channels formed at opposite sides of the joint-breaking web, said channels being of a width greater than that of the joint-breaking web, and the drip-webs being of widthwise dimensions less than that of each of the channels.

5. A building-brick comprising side-load-sustaining members, hollow throughout their length to provide two longitudinally-extending air-cells therein, and having upper and lower mortar-contacting surfaces lying in common planes and inside and outside walls disposed substantially perpendicularly thereto; a base-web connecting the members at their lower portions and also lying in the common plane of the lower mortar-contacting surfaces of the members; a top-web connecting the members adjacent their upper portions and disposed in a plane below the upper contacting surfaces of the members; drip-webs depending from the base-web in spaced relationship from the load-sustaining members; the lower faces of the drip-webs being below the common plane of the lower surfaces of the side members and the lower face of the base-web; a central mortar-joint-breaking web upstanding from the top-web and having its upper face in the common plane of the upper mortar-contacting surface of the members; a plurality of moisture-receiving channels formed at opposite sides of the joint-breaking web and of widthwise dimensions greater than that of the web; and a channel formed between the drip-webs; the joint-breaking web occupying a position coinciding with the channel between the drip-webs.

6. A wall-construction composed of alternating courses of air-cell bricks and binding material, the bricks being of wall widthwise dimensions and each comprising two spaced-apart load-sustaining side-members having upper and lower mortar-contacting surfaces, respectively, lying in common planes; a base-web connecting the bases of the members and lying in the common plane of the lower surfaces thereof; a top-web connecting the upper portions of the members below the plane of their upper surfaces; a pair of spaced-apart drip-lugs depending from the base-web in spaced relationship from the members, the lower surfaces of the drip-lugs on one brick lying in a plane above the upper surfaces of the subjacent brick; a central drip-lug or web upstanding from the top-web and spaced apart from the base-members; longitudinal moisture-receiving channels between the central drip-web and the load-sustaining members; and a central channel between the drip-lugs; each central drip-lug registering with the central channel and detached from the drip-lugs, and each depending drip-lug registering with one of the moisture-receiving channels and detached from the load-sustaining members; the central upstanding web and the drip-lugs, respectively, being spaced from the ends of the mortar-contacting surfaces of the members, whereby they are out of contact with mortar laid between the bricks.

7. A wall-construction including air-cell bricks of wall-widthwise dimensions, each comprising two spaced-apart load-sustaining side-members having their upper and lower surfaces, respectively, lying in common

planes; a base-web connecting the bases of the members; a top-web connecting the upper portions of the members below the plane of their upper surfaces; a pair of spaced-apart drip-lugs depending from the base-web in spaced relationship from the members, the lower surfaces of the drip-lugs on one brick lying in a plane above the upper surfaces of the subjacent brick; a central drip-lug or web upstanding from the top-web and spaced apart from the base-members, the upper surface of said upright lug and the load-sustaining members being in approximately the same plane; longitudinal moisture-receiving channels between the central drip-web and the load-sustaining members; a central channel between the drip-lugs, each central drip-lug registering with the central channel and detached from the drip-lugs, and each depending drip-lug registering with one of the moisture-receiving channels and detached from the central drip lug and from the load-sustaining members; and mortar-joints between the load-sustaining members and broken by the moisture-receiving and central channels; the central drip-lug and the depending drip-lugs being spaced from the mortar-joints.

8. A building brick comprising a base, the portions of which are in approximately the same plane, a plurality of spaced-apart chambers disposed on said base; a cross-web arranged in spaced relation to the base and connecting said chambers at a point appreciably above a plane passing horizontally through the centers thereof, and constituting, with said chambers and base, an elongated air-chamber; and an upright web upstanding from said cross-web in spaced relation to said chambers, the outer surface of said upright web being in approximately the same plane as one of the outer edges of said chambers.

9. A building brick comprising a base; a plurality of upright members arranged in spaced relation upon said base; cross-members connecting certain of said upright members and constituting therewith and with said base a plurality of hollow spaced-apart chambers; a cross-web connecting two of the upright members between certain of said chambers, said cross-web being in spaced relation to the base, and connected to the chambers at a point appreciably above a plane passing horizontally through the centers thereof and forming therewith and with certain of the upright members, a hollow chamber disposed between the other chambers; the portion of the base juxtaposed to said cross-web being in approximately the same plane as the corresponding portion of the base disposed opposite the other cross-members; and an upright web disposed on said cross-web in spaced relation to certain of the upright members, the outer surface of said upright web being in approximately the same plane as one of the outer surfaces of said chambers.

10. A building brick comprising a base; upright and cross members joined together and to said base to constitute a plurality of spaced-apart chambers disposed upon said base; a cross-web connecting certain of said upright members and arranged in spaced relation to a portion of the base, and connected to the chambers at a point appreciably above a plane passing horizontally through the centers thereof, to constitute, with the upright members and said portion of the base, an elongated chamber disposed between the other chambers; the portion of the base disposed opposite the cross-web being in approximately the same plane as the corresponding portions of the bases of the other chambers; and an upright web disposed upon the cross-web and in spaced relation to certain of the upright members and dividing the space between the chambers, the outer surface of said upright web extending to approximately the plane of one of the outer surfaces of said chambers.

11. A building-brick comprising a plurality of spaced-apart load-sustaining members having their upper and lower surfaces, respectively, lying in common planes, a base-web and a horizontal transverse web connecting the load-sustaining members arranged appreciably above a plane passing horizontally through the centers of the load-sustaining members and forming with the base-web and the lower portions of the load-sustaining members a central channel, a central longitudinal web connected to said transverse web and disposed between and spaced from said side-members and adapted for the purpose of a hand-hold, and drip-lugs depending from the base-web and disposed relatively remote from the lower mortar-contacting surfaces of the side-members.

12. A one-handed building-brick comprising two side load-sustaining members, hollow throughout their length to provide air-cells, and having upper and lower mortar-contacting surfaces; a base-web connecting the members at their lower portions; a top-web connecting the members at their upper portions and disposed in a plane below the upper mortar-contacting surfaces of the members; drip-webs depending from the base-web intermediate the ends thereof and removed from the inner ends of the mortar-contacting surfaces; a central mortar-joint-breaking web upstanding from the top-web; the upper mortar-contacting surfaces of each of the members and the upper face of the joint-breaking web being in the same common plane; the lower faces of the drip-webs being below the plane of the lower mortar-contacting surfaces of the side members; the top and base-webs and the inner walls of the

side members forming a closed air-cell between the members; and a plurality of moisture-receiving channels formed at opposite sides of the joint-breaking web, the side walls of the drip-lugs being disposed in planes in substantial parallelism with the side walls of the channels.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES P. WILLIAMS.

Witnesses:
LILLIAN BILLMAN,
F. G. DAHLQUIST.