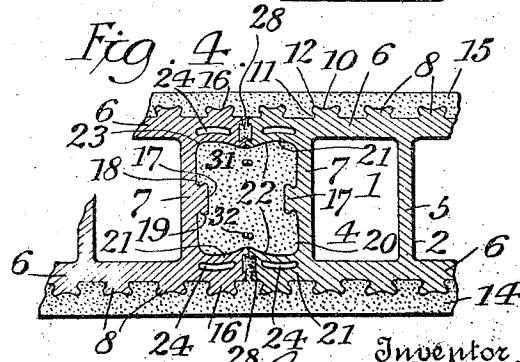
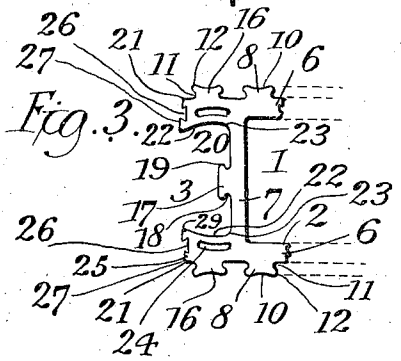
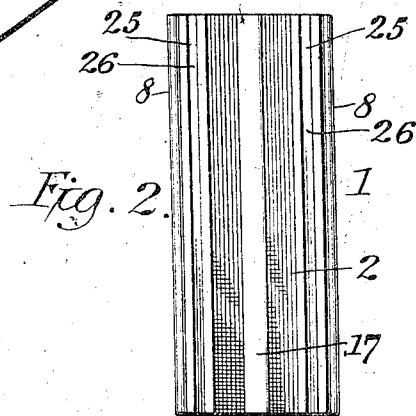
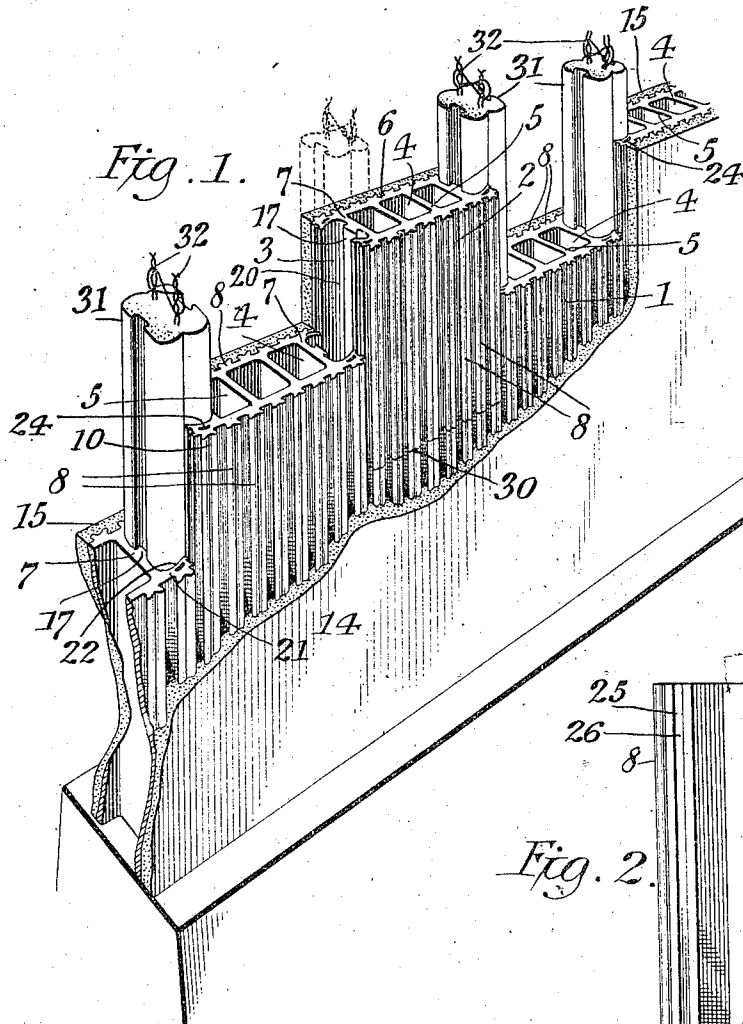


L. K. DAVIS.
BUILDING CONSTRUCTION.
APPLICATION FILED JAN. 18, 1911.

1,041,245.

Patented Oct. 15, 1912.



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UNITED STATES PATENT OFFICE.

LEWIS K. DAVIS, OF NEW YORK, N. Y.

BUILDING CONSTRUCTION.

1,041,245.

Specification of Letters Patent.

Patented Oct. 15, 1912.

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To all whom it may concern:

Be it known that I, LEWIS K. DAVIS, a citizen of the United States, and resident of New York, in the county and State of New York, have invented certain new and useful Improvements in Building Construction, of which the following is a specification.

This invention relates to improvements in building constructions, and it has for its object to provide a simple and inexpensive construction for that class of walls or other structures which are built of hollow tiles or blocks formed of vitrified clay or analogous material.

My present improvements are designed to provide an improved construction of the character set forth, which can be readily and economically manufactured and which will possess advantages in point of strength, durability, resistance to all strain, effective locking at the joints, moisture-proof conditions especially at the vertical joints, convenience, effectiveness and general efficiency.

My present invention especially involves in its subject-matter a building tile or block having an improved end construction for relative association with the vertical columns of concrete or cementitious material which are usually employed at the vertical wall joints at the abutting ends of adjoining blocks and with the stucco or finishing plastic which is applied to the exterior surfaces of the blocks and extends across the joints, substantially as hereinafter fully described.

The improved block involved in the subject-matter of my present invention is preferably formed of ceramic material, such as vitrified clay, and salt-glazed to render the vitrified block absolutely impervious to moisture and dampness, after the manner set forth and covered by my previous Patent, No. 915,664, dated March 16, 1909; but it may be constructed of any other suitable or adapted material.

In the drawings—Figure 1 is a perspective view illustrating a wall construction according to my present invention and improvements. Fig. 2 is a detail view, showing an end elevation of the improved block. Fig. 3 is a detail view, showing a top plan of the end-joint construction of the improved block. Fig. 4 is a detail view, on a horizontal cross-sectional plane, showing two of the adjoining blocks in their assembled wall construction.

Corresponding parts in all the figures are denoted by the same reference characters.

Referring to the drawings, 1 designates the improved tile or block embodied in the subject-matter of my invention, which consists of a body-portion, 2, having at each end a projecting end-joint construction, 3. Said block is in a continuous vertical length of uniform construction, and its body portion is provided with continuous vertical openings, 4, formed by transverse vertical partitions, 5, extending between the sides, 6—6. The hollow body thus formed consists of the longitudinal vertical sides 6 and the transverse vertical partitions 5, and has vertical end walls, 7—7, corresponding to the intermediate partitions 5, beyond which end walls the end-joint construction projects and extends continuously and uniformly throughout the vertical length of the block. The exterior faces of the sides 6 are provided with a series of parallel ribs or projections, 8, preferably extending vertically throughout the vertical length of the block and of flaring or approximately dovetail contour. Preferably, in the improved contour of these ribs or projections, they have their outer faces concaved, as at 10, to form a continuous vertical channel, and their side edges concaved, as at 11, to form continuous vertical channels, and their edges rounded or curved, as at 12, to avoid sharp projections. These ribs or projections 8 may of course be in any other suitable form or arrangement, and they are designed to constitute a binding surface for the finishing stucco or plaster which forms the outside wall-surface, as at 14, and the inside finishing surface, as at 15, in a wall construction constituted by a single thickness of these improved blocks.

The binding surfaces just described are particularly desirable when the blocks are formed of ceramic material with non-absorbent glazed surfaces, as plaster or other finishing plastic material will not readily adhere to the glazed surface but will firmly bind and lock into the recesses of a binding surface formed of flaring ribs or projections. The ribs or projections 8 are preferably continued in their series arrangement at the sides of the projecting end-joint construction, at the ends of the improved block, as shown at 16.

The end-joint construction 3 comprises a rib or projection, 17, at the outer side of

the vertical end wall 7 and at the central portion thereof, which extends throughout the vertical length of said wall and is of flaring or approximately dovetail contour.

5 Preferably, the contour of said rib or projection 17 is such that its side edges are concaved, as at 18, and are curved or rounded to the outer face of the rib, as at 19, to avoid sharp projections. Said ribs 17 project into

10 a recess 20, formed by the side walls, 21--21, of the end-joint construction 3, and said side walls, 21, have their inner faces throughout their vertical length of flaring contour, as at 22, so that they extend inwardly toward the

15 base of the recess 20 constituted by the end wall 7, and thus said recess 20 is of flaring or approximately dovetail contour. Preferably, in the contour of the inner faces 22 of the side walls 21, these faces are curved in

20 approximately concave form, as shown, and are curved, as at 23, at their connection with the end wall 7. The improved relative construction as just described provides an end

25 recess affording increased width for the portion of the vertical joint-column of concrete or cementitious material which engages with the end-joint construction in the improved building construction according to my present invention and improvements, and

30 also affords additional strength at the end-joint construction by enabling an increased width of the side walls 21 thereof especially at the inner connection of said side walls with the end wall 7. The improved construction, constituted by the flaring or dove-

35 tail side walls 21 in combination with the central rib or projection 17, also provides a double key-hold for the concrete joint-column, the recess 20 constituting one key-hold

40 and the rib or projection 17 constituting a supplementary key-hold at the central portion of the base of said recess, which is an important feature of my present improvements. The construction is also such, in its

45 operative characteristics, that the central rib 17 forms a key-hold at the side of the concrete joint-column, while the flaring or dovetail contour of the side walls 21--21 respectively form auxiliary key-holds at the oppo-

50 site sides of the mouth of the recess, and conjointly form double auxiliary keys supplementary to the central key 17. In practice, the side walls 21 preferably have an opening or bore, 24, extending vertically

55 through their body width or thickness, for purposes of lightness and facility in the manufacture of the improved blocks. The outer faces, 25, of the side walls 21 are preferably provided with a groove or channel,

60 26, extending throughout the vertical length of said face and of flaring or dovetail contour, and the inner portion of said face 25, beyond the channel 26, is preferably on a plane projecting beyond the plane of the

65 outer portion of said face at the outer side

of the channel, as shown at 27, so that when the adjoining blocks 1 are abutted end to end the inner portion 27 of the face 25 will abut directly against the corresponding part of the adjoining block, while the outer portion of the face 25 will be a short distance

70 away from the corresponding part of the adjoining block, thus forming a channel, as at 28, through which the stucco or plaster of the outside wall-surface 14 and the plastic material of the inside finishing surface 15

75 can pass into the grooves or channels 26, which latter thus form a key-lock for the plastic finishing surfaces. The projecting portions 27 of the faces 25, however, form a

80 tight joint which prevents the concrete or cementitious material of the joint-column from passing beyond the recess 20. The advantages of the construction just set forth

85 are that a key-hold is provided for the plastic of the finishing surfaces 14 and 15 at the vertical joints between the blocks and the plastic material of the finishing surfaces is set in between the end-joints, so that the

90 passage of moisture or dampness into the wall construction at the vertical joints is entirely and effectively obviated, it being understood that dampness and moisture does

95 not effectively pass at horizontal joints in wall constructions of this character but would be more apt to pass at the vertical joints. Preferably, the end edges of the

100 outer faces 25 of the end walls 21 are rounded, as at 29, to avoid sharp projections.

In a wall construction with the improved blocks 1, according to my present invention, the blocks are set vertically side by side and end to end and superposed, the arrangement

105 being preferably such that the different horizontal layers of blocks break joints or are staggered, as at 30, to avoid a continuous horizontal joint. The opposite recesses 20

110 at the abutting ends of each pair of adjoining blocks 1 thus conjointly form a double-joint recess or space in which are built up columns of concrete or cementitious material, 31, extending continuously and

115 vertically through the superposed layers or series of blocks and provided with vertical metallic reinforcing elements or ribs, 32, of any suitable or adapted construction. The continuous vertical columns of concrete 31

120 conforms to the interior space of the recesses 20 at the abutting ends of two adjoining blocks and thus have a sextupled key-hold constituted by the base-rib or projection 17

125 and the locks at the opposite inner faces 22 of the sides 21 of each recess 20.

It will be of course understood that the improved end-joint construction 3 is provided at each end of the blocks 1, and that a continuous uniform condition exists in the wall construction according to my invention and improvements.

The advantages of my invention will be readily understood by those skilled in the art to which it appertains. The construction provides in a simple and effective manner a structure possessing maximum strength and durability as well as lightness and high efficiency in fire-proof and moisture-proof conditions, and the improved blocks are adapted to be readily and economically manufactured in a continuous operation through an ordinary clay die-press.

I do not desire to be understood as limiting myself to the detail construction and arrangement of parts as herein shown and described, as it is manifest that variations and modifications therein may be resorted to, in the adaptation of my invention to varying conditions of use, without departing from the spirit and scope of my invention and improvements. I therefore reserve the right to all such variations and modifications as properly fall within the scope of my invention and the terms of the following claims.

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

1. In building constructions, a wall comprising a plurality of blocks having at their abutting ends a projecting end-joint portion formed by side walls and a base, which walls constitute a continuous vertical recess, the walls of said recess being provided at its side faces with inwardly-extending projections and provided with a projecting portion supplementary thereto and extending into said recess, which projections constitute double and auxiliary key-holds in the recess, and vertical columns of concrete or cementitious material filling the adjoining recesses of the abutting projecting end-joint portions of the adjoining blocks and having a key-hold connection with the side projections and supplementary projection in each of said recesses, said key-holds being operative in the longitudinal plane of the wall

2. In building constructions, a wall comprising a plurality of blocks having at their abutting ends a projecting end-joint portion formed by side walls and a base, which walls constitute a continuous vertical recess, the walls of said recess being provided at its side faces with inwardly-extending projections and at its base with a projection extending into said recess at right angles to said side projections, which projections constitute double and auxiliary key-holds in the recess, and vertical columns of concrete or cementitious material filling the adjoining recesses of the abutting projecting end-joint portions of the adjoining blocks and having a key-hold connection with the side and base projections in each of said recesses, said key-holds being operative in the longitudinal plane of the wall.

3. In building constructions, a wall comprising a plurality of blocks having at their

abutting ends a projecting end-joint portion formed by side walls and a base wall, which walls constitute a continuous vertical recess, the inner faces of the side walls being of flaring or dovetail contour with relation to the base wall to form inwardly-extending projections, and the base wall being provided at its face with a flaring or dovetail projection extending into said recess intermediately of said side walls, whereby the side walls and projection on the base wall constitute double and auxiliary key-holds operative in the longitudinal plane of the wall, and vertical columns of concrete or cementitious material filling the adjoining recesses of the abutting projecting end-joint portions of the adjoining blocks and having a key-hold connection with the inner faces of the side walls and the projection of the base wall of each of said recesses.

4. In building constructions, a wall comprising a plurality of blocks having at their abutting ends a projecting end-joint portion formed by side walls and a base, which walls constitute a continuous vertical recess, the walls of said recess being provided with inwardly-extending projections at its faces to constitute key-holds operative in the longitudinal plane of the wall, the end faces of said side walls being provided with grooves or channels, vertical columns of concrete or cementitious material filling the adjoining recesses of the abutting projecting end-joint portions of the adjoining blocks and having a key-hold connection with the projections in each of said recesses, and a plastic material filling the space formed by the end grooves or channels at the abutting ends of the adjoining blocks.

5. In building constructions, a wall comprising a plurality of blocks having at their abutting ends a projecting end-joint portion formed by side walls and a base, which walls constitute a continuous vertical recess, the recess being provided with inwardly-extending projections at its faces to constitute key-holds operative in the longitudinal plane of the wall, the end faces of said side walls being provided with grooves or channels, vertical columns of concrete or cementitious material filling the adjoining recesses of the abutting projecting end-joint portions of the adjoining blocks and having a key-hold connection with the projections in each of said recesses, and a plastic finishing surface applied upon the face of the block and entering the end-joint between adjoining blocks and filling the space formed by said end grooves or channels.

6. In building constructions, a wall comprising a plurality of blocks having at their abutting ends a projecting end-joint portion formed by side walls and a base, which walls constitute a continuous vertical recess,

the walls of said recess being provided with inwardly-extending projections at its faces to constitute key-holds operative in the longitudinal plane of the wall, the end faces of said side walls being provided with grooves or channels and having the end face at the inner side of said grooves or channels projecting beyond the end face at the outer sides of said grooves or channels, whereby the portion of the end faces at the inner side of said grooves or channels abut together at the end-joint between adjoining blocks while the portion of the end faces which is beyond and at the outer side of said grooves or channels is separated between adjoining blocks, vertical columns of concrete or cementitious material filling the adjoining recesses of the abutting projecting end-joint portions of the adjoining blocks and having a key-hold connection with the projections in each of said recesses, and a plastic finishing surface applied upon the face of the block and entering the space at the end-joint between adjoining blocks at the outer side of said end grooves or channels and filling the space formed by said end channels or grooves at the end-joints between adjoining blocks to form a key-hold operative in the lateral plane of the wall.

7. In building constructions, a wall comprising a plurality of blocks having at their abutting ends a projecting end-joint portion formed by side walls and a base, which walls constitute a continuous vertical recess, the faces of the side walls and base wall being provided with projections constituting key-holds and the end faces of said side walls being provided with grooves or channels, vertical columns of concrete or cementitious material filling the adjoining recesses of the abutting projecting end-joint portions of the adjoining blocks and having a key-hold connection with the projections upon the side and base walls of each of said recesses, and a plastic material applied to the face of the block and entering the end-joint between adjoining blocks and filling the space formed by said grooves or channels at the end-joint between adjoining blocks.

8. In building constructions, a wall comprising a plurality of blocks provided with grooves or channels in their abutting end faces and having the end face at the inner side of said grooves or channels on a plane beyond the portion of the end face at the outer side of said grooves or channels, whereby the end faces at the inner side of said grooves or channels closely abut at the end-joint between adjoining blocks and the portion of the end faces which is at the outer side of said grooves or channels is separated at the end-joint between adjoining blocks, and a plastic material applied to the face

of the block and entering the space between the portion of the end faces at the outer side of the grooves or channels at the end-joint between adjoining blocks and filling the space formed by said grooves or channels at the end-joint between adjoining blocks to form a key-hold operative in the lateral plane of the wall.

9. A building block of the class described, having a projecting end-joint portion formed by side walls and a base, which walls constitute a continuous vertical recess, and provided with inwardly-extending projections at the side faces and at the base face of said recess, which projections constitute double and auxiliary key-holds operative in both the longitudinal and lateral plane of the block.

10. A building block of the class described, having a projecting end-joint portion formed by side walls and a base, which walls constitute a continuous vertical recess, and provided with inwardly-extending projections at the side faces and with a central projection at the base face of and extending into said recess at right angles to said side projections, which projections constitute double and auxiliary key-holds operative in both the longitudinal and lateral plane of the block.

11. A building block of the class described, having a projecting end-joint portion formed by side walls and a base wall, which walls constitute a continuous vertical recess, the inner faces of said side walls being of inwardly flaring or semidovetail construction to respectively form inwardly-extending projections at the inner faces of said side walls and the face of said base wall being provided with a flaring or dovetail projection extending into said recess intermediately of said side walls, said side walls and base projection constituting double and auxiliary key-holds operative in both the longitudinal and lateral plane of the block.

12. A building block of the class described, having a projecting end-joint portion formed by side walls and a base wall, which walls constitute a continuous vertical recess, and having inwardly-extending projections constituting key-holds within said recess and operative in the longitudinal plane of the block, and provided at the end faces of said side walls with grooves or channels.

13. A building block of the class described, having a projecting end-joint portion formed by side walls and a base wall, which walls constitute a continuous vertical recess and having projections constituting key-holds within said recess, and provided at the end faces of said side walls with grooves or channels, the portion of said end faces at the inner side of said grooves or channels being on a plane beyond the por-

tion of said end faces which extends beyond and at the outer side of said grooves or channels, and said outer reduced portion extending to the plane of the face of the block.

- 5 14. A building block of the class described, having a projecting end-joint portion formed by side walls and a base wall, which walls constitute a continuous vertical recess, and having projections forming key-holds at the side and base of said recess, and provided at the face of its body portion with projections forming key-holds for a finishing plastic and with corresponding projections at the outer face of the side walls of the projecting end-joint portion.

- 15 15. A building block of absorbent ceramic material with non-absorbent surfaces having a projecting end-joint portion formed by side walls and a base wall, which walls constitute a continuous vertical recess, and provided within said recess with key-holds projecting inwardly from said side walls and operative in the longitudinal plane of the block and upon its non-absorbent surface with projections constituting key-holds for a finishing plastic.

- 20 16. A building block having a hollow body portion provided with T-shaped depressions in each end thereof and near the exposed

outer face of the block, the walls of these 30 depressions near said exposed outer faces of the block being of less depth than the inner faces, whereby when the blocks are brought together a channel is formed providing a means for the introduction of the cement 35 into said T-shaped depressions, thereby locking the blocks together and the cement to their outer faces

17. A building block having an undercut depression in its end which is adapted to 40 abut against the adjoining block, said depression being adjacent the exposed outer face of the block and having its wall adjacent said exposed outer face of the block of less depth than the wall at the inner side of 45 the depression, whereby when the ends of adjoining blocks are abutted a channel is formed providing a means for the introduction of a surface plastic into said undercut depression, thereby locking the blocks 50 together and the plastic to their outer faces.

In witness whereof I have signed my name in the presence of the subscribing witnesses.

LEWIS K. DAVIS.

Witnesses:

SIDNEY O'LEARY,
E. M. VON HOPE.