April 26, 1938. L. S. FOWLER 2,115,160

BUILDING BLOCK

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Fig. 1.

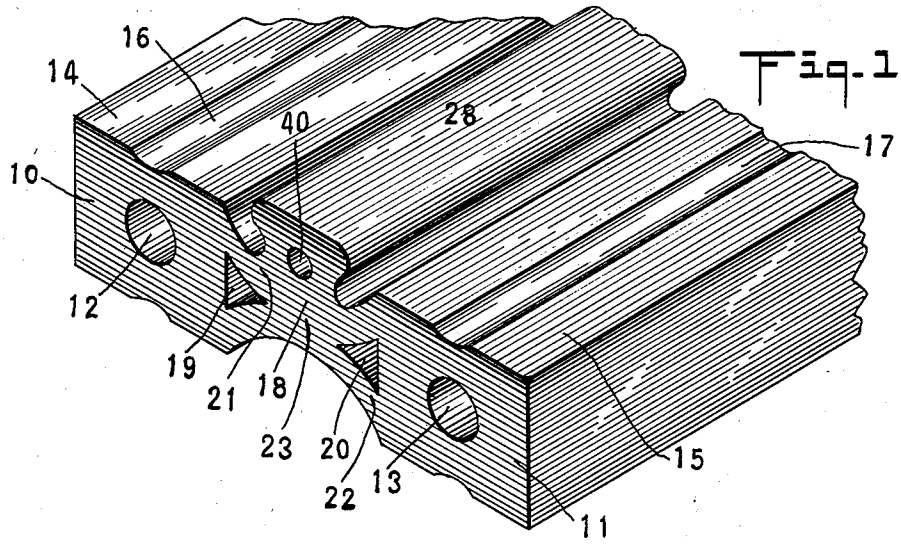
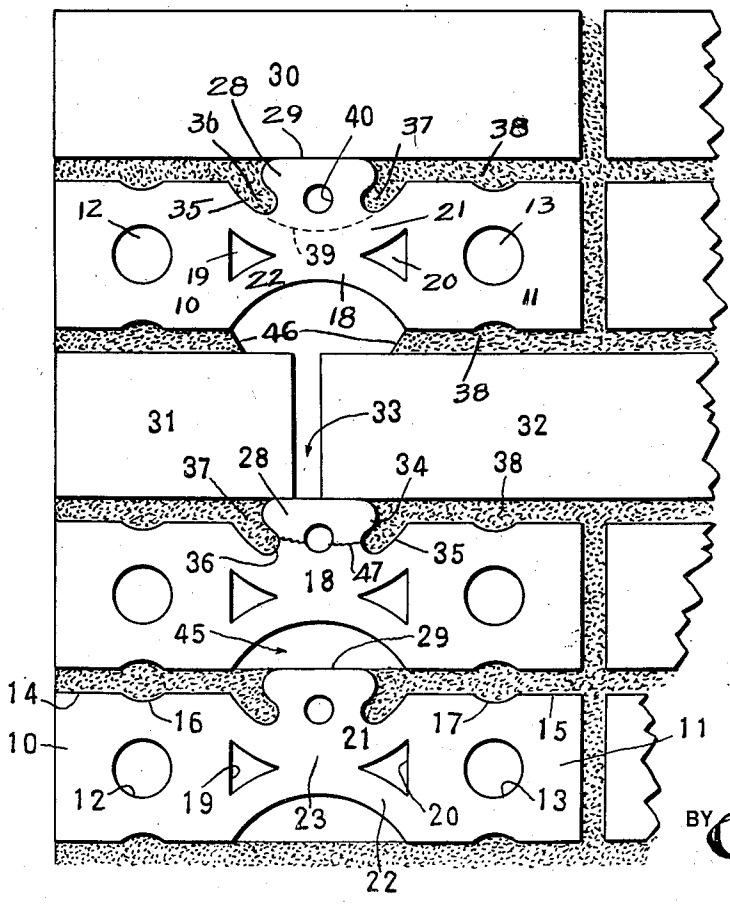


Fig. 2.



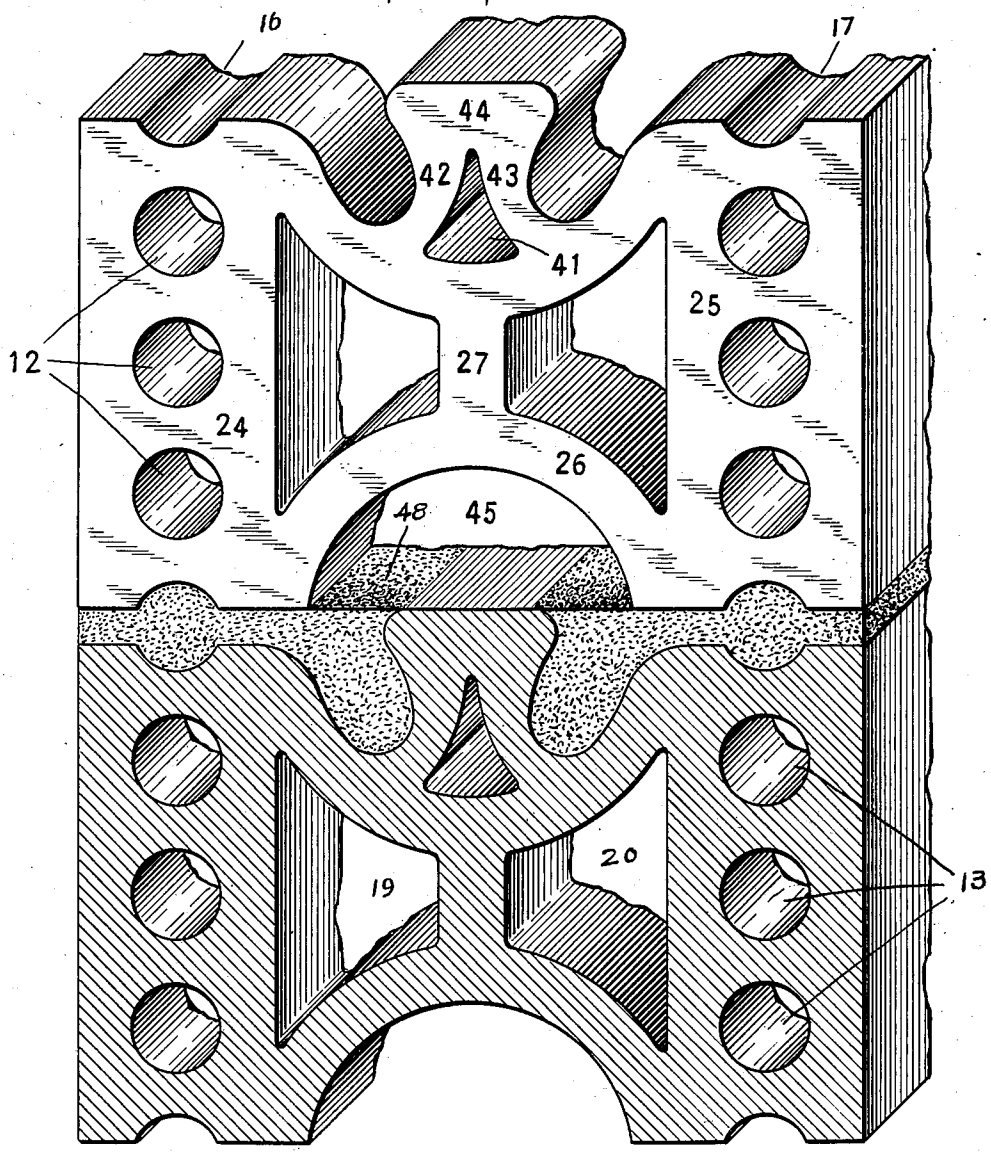
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Fig. 3.



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BUILDING BLOCK

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9 Claims. (Cl. 72—41)

The invention relates in general to hollow building blocks and specifically relates to building blocks of the type which are provided with a lifting handle.

The primary object of the invention is to provide a simple form of building block which will have all of the advantages such as maximum strength with least amount of material used, inherent in the form of block disclosed in my above identified patent and which, additionally, will provide a combined handle, mortar joint spacing gauge and support for a superimposed block or blocks, and at the same time which will provide a construction which can be manufactured economically and which is designed to permit the handle to be broken off, if desired, without impairing the structural strength of the remaining parts which constitute the block proper.

It has been suggested heretofore to provide hollow building blocks of this type but they have not proven to be practical in actual use, among other reasons due to the fact that unequal distribution of material in the design of such blocks deleteriously affects the desired uniformity of drying with resulting formation of internal stresses which are liable to develop flaws and cracks in the finished blocks. Further, in the case of known form of handle blocks, any accidental breaking off of the handle portion, or any intentional breaking of this portion to insure the proper breaking of joints in a wall construction, results in such a weakening of the block as to render it particularly liable to breaks along the line weakened by the breaking off of the handle portion.

To overcome these defects, the present disclosure features a construction of building block which is complete per se in the absence of any handle forming element, so that, even if the handle element should be accidentally or intentionally broken off, the main load carrying parts of the blocks and their connecting structures will remain intact and structurally unimpaired and in which the material is so distributed in both the block per se, as well as in the handle forming portion so as to obtain maximum structural strength with the amount of material used and the designing of the parts so that there will be a substantial uniformity in drying during the manufacture of the same with resulting minimizing of internal structural weaknesses. The invention also features a construction of handle element with sufficient rigidity and with the proper design to transmit therethrough and to the load carrying portions of the block the weight of superposed block or blocks and at the same time to provide for a width of construction transverse to any such line of weight or thrust so that the handle forming portion may be readily removed without damage to the part to which it is attached.

Various other objects and advantages of the invention will be in part obvious from an inspection of the accompanying drawings and in part will be more fully set forth in the following particular description of one form of mechanism embodying the invention, and the invention also consists in certain new and novel features of construction and combination of parts hereinafter set forth and claimed.

In the accompanying drawings:

Fig. 1 is a view in perspective of one end of a building block constituting a preferred embodiment of the invention;

Fig. 2 is a view in side elevation of a portion of a wall employing the type of block shown in Fig. 1 and illustrated in connection with facing and common bricks arranged in connection with the blocks herein featured to show several ways in which the blocks may be used; and

Fig. 3 is a view in perspective of portions of two blocks, each constituting a slight modification of the form of block shown in Fig. 1, shown in superposed relation forming part of a wall with one end of the upper block exposed and with the adjacent end of the lower block shown in cross section as would be the case where the showing indicated a vertical cross section of the wall at one of the joints.

In the drawings and referring first to the form illustrated in Figs. 1 and 2, the block comprises in effect three portions of equal width and in the form shown in Fig. 2 the block is twelve inches wide, each portion having a width of four inches. The outer portions 10 and 11 are relatively thick load carrying walls provided with horizontally extending cores 12 and 13 and having either flat top and bottom faces, or as illustrated, the top faces 14 and 15 are contained in a horizontal plane and are provided with mortar receiving grooves 16 and 17. The bottom faces of the blocks are similarly disposed in a horizontal plane and provided with corresponding mortar receiving grooves. The load carrying walls 10 and 11 are integrally connected by a cellular construction 18 which is also provided with horizontally extending cores 19 and 20. The cellular construction includes a pair of horizontally extending concaved webs 21 and 22, the crown portions of which are integrally connected to form a portion at 23 which is relatively deep considered vertically. The webs merge at opposite ends into the walls 10 and 11.

Referring to the block construction shown in Fig. 3, it will be noted that the main distinction over the form thus described is that the load carrying wall 24 and 25, corresponding to the walls 10 and 11, are of greater depth and are provided with a plurality of cores corresponding to the cores 12 and that instead of the webs 25 and 26, corresponding to the webs 21 and 22, con-

tacting and merging at their center, they are separated and are connected by a vertically disposed central web 27.

The lower mortar receiving faces of the blocks illustrated in Fig. 3 on opposite sides of the central groove outlined by the web 26, are formed in part by the lower faces of the load sustaining walls and in part by the end portions of the web which extends between the groove and the adjacent wall and are thus each of greater width than the width of the associated wall.

The present disclosure distinguishes by the provision of a combined handle, mortar joint gauge and superposed block supporting rib 28. This rib projects upwardly from the center of the uppermost web 21 and is outlined at its upper face by a flat surface 29 spaced from the plane containing the top faces 14 and 15 of the load supporting walls 10 and 11, distance equal to the depth of the conventional mortar joint 46, in the instant case being three-eights of an inch. The flat top surface 29 is relatively wide and is designed in certain forms of wall construction to support superposed building blocks or bricks such as a single facing brick 30 shown in the top of Fig. 2, or to have one half thereof support a narrow facing brick 31 on one portion thereof, with a header brick 32 on another portion thereof and preferably spaced apart to provide an air chamber 33 therebetween.

From the relatively wide head portion of the top surface 29, opposite sides of the web are formed substantially S-shaped as shown at 34 and merge into the top face 35 of the web 21 to form therewith a curved re-entrance groove or mortar receiving channel or space 36 underlapping the head and adapted to receive a depending tongue 37 forming part of the mortar joint 38 disposed on top of each of the load carrying walls and disposed between the same and the underside of the blocks next above in the wall construction shown in Fig. 2. This construction provides a deep depending mortar joint receiving space underlapping opposite sides of the handle forming rib.

From this construction, it is noted that the rib is positioned entirely to the outside of the wall connecting web 21, the projected top surface of which is indicated in dotted lines at 39 in Fig. 2. If this rib was formed solid, it would not only utilize more material than is necessary to perform the functions indicated herein, but it would have the additional disadvantage in that there would be a slower drying out of this bulky mass than would be the case of the portions which go to make up the block proper, and accordingly the rib is provided centrally thereof with a horizontally extending core 40 which is contained entirely within the outline of the rib and thus disposed exteriorly of the connecting web 21. The configuration of the rib 28 with its wide head and reducing in cross sectional area towards the web provides a weakened neck portion which facilitates the breaking off of the web at the weakened portion and across the core 40 approximately along the broken line 47. In this way, the handle can be broken off below the plane of its top surface and the block can be used conventionally and even with the handle broken off the block possesses the structural strength necessary to function as claimed for the block in the above identified patent.

The construction shown in Fig. 3 is of similar design, the triangular shape core 41 corresponding to the circular core 40 in Fig. 1 and the greater depth of material in the web in this case more pronouncedly showing the webs which go to make up the handle portion to be formed of two curved walls 42 and 43, merging at their upper ends to form a wide head.

While the blocks are shown in Fig. 2 used in connection with conventional bricks or other known form of building blocks, it will be understood that the more usual construction will be to superpose the blocks one on the other in the manner suggested in Fig. 3. In any case the lower web 22 will form an arc arched across a dead air space 45. The web 22 provides a strong arch which in the case of the showing in the upper tiers of Fig. 2, and in the showing in Fig. 3, acts to transmit strain on the handle forming web in an outwardly and downwardly curved direction to the outer massive load carrying walls of the blocks therebelow. In the showing in Fig. 2, the mortar joint 38 is interrupted as shown at 46 so as to provide the air chamber 45 in communication with the air space 33 therebelow but it is, of course obviously within the scope of the disclosure to fill the space 45 as well as the space 33 with mortar should there be desired a solid mortar joint continuous from face to face of the block. It is apparent that utilizing the top flat surface 29 of the handle forming web as a support, it is possible to level the mortar as suggested at 48 in Fig. 3 before the superposed block or blocks are disposed in position and this provides a quick, accurate means for insuring uniformity in depth of the succeeding mortar joints. Should a mortar joint of a depth less than the extent of upward projection of the handle forming rib be desired, it is obviously possible to still use the flat, broad top face 29 as a support, for a properly designed mortar spread which could be designed to give any required depth to the mortar spread. Should a central support be desired at the level of the tops of the load carrying walls, it is possible to break off the top of the handle forming rib and use the surface of the remaining part as a rough mortar seat.

It is appreciated that any mutilation of the handle forming rib has no effect on the structural strength of what remains and which remains possess all of the load carrying and strain distributing characteristics of the similar block disclosed in the above mentioned patent.

I claim:

1. A hollow building block provided with horizontally extending cores and comprising a pair of relatively thick load carrying walls with a cellular construction integrally connecting the walls, said cellular construction including a horizontally extending concaved web merging at opposite ends into the walls, a rib projecting upwardly from said concaved web and constituting a handle and a mortar joint spacing means, said rib comprising a wide head having a flat surface disposed above the plane of the tops of the load carrying walls and adapted to provide a support for a superposed building block, opposite sides of said rib being somewhat S-shaped and coacting with the adjacent upper face of the web to form rounded re-entrant grooves on opposite sides of the rib depending below said plane and forming a deep depending mortar joint receiving space underlapping opposite sides of the handle forming rib.

2. A hollow building block provided with horizontally extending cores and comprising a pair of relatively thick load carrying walls with a cellular construction integrally connecting the walls, said

cellular construction including a pair of horizontally extending curved webs merging at opposite ends into the walls and a handle forming a rib projecting upwardly from the center of the uppermost web and extending above the plane of the tops of the load carrying walls, the top of said rib being flat and adapted to receive superposed blocks with a mortar space between the superposed blocks and the load carrying walls and said rib provided with a horizontally extending core entirely contained within its outlines and said rib comprising a broad head and a neck forming shank, forming a weakened portion adapted to be broken away across its core without mutilating the connecting cellular construction and said block having structural strength to function even when the rib is broken away and being operatively independent of said rib.

3. A hollow building block provided with horizontally extending cores and comprising a pair of relatively thick load carrying walls with a cellular construction integrally connecting the walls, said cellular construction including horizontally extending curved webs merging at opposite ends into the walls, a rib comprising a broad head having a flat top surface adapted to provide a support positioned above the plane containing the tops of the load carrying walls and said rib comprising two curved walls integrally connected at their upper ends to form the head and rounding downwardly and outwardly from the head and merging into the uppermost of the webs to form a weakened neck portion across which the rib may be broken in separating it from the remainder of the block.

4. A hollow building block provided with a pair of load carrying walls with a cellular construction integrally connecting the walls, said cellular construction including a concaved web, a handle forming rib projecting upwardly and integrally from the center of said web and projecting above a plane containing the top surfaces of the walls, said rib having a relatively wide head and reducing in cross sectional area towards the web to form a narrow neck portion and said rib provided with a core contained within its outlines and thus positioned exteriorly of the outlines of the web.

5. A hollow building block provided with a pair of vertically extending parallel load carrying walls, each provided with at least one horizontally extending core, a cellular construction of approximate H form considered in end elevation having its ends rounding into the walls, and a rib of approximate T form having its head projecting above the plane containing the top surfaces of the walls and having its stem portion spaced from the side walls to form a mortar containing space therebetween and the lower end of the stem portion integral with the cellular construction at its midportion.

6. A wall construction comprising two courses of building blocks, one of the blocks in the lower course comprising two load transmitting walls with a cellular construction integrally connecting the walls, the upper side of said cellular construction including a concaved web merging at opposite ends into the walls, a rib of approximate T-shape projecting upwardly from the center of the concaved web, the upper side of the rib providing a flat surface located in a horizontal plane spaced slightly above the plane containing the upper surface of the two load transmitting walls, a block in the upper course having a flat underside resting directly and without intermediate mortar on the top surface of the rib, and a mortar joint between the underside of the said block in the upper course and one of the two load transmitting walls of the first named block.

7. A wall construction comprising two superposed similar blocks, each block including two rugged load transmitting walls, each of substantially rectangular, columnar form and with a wall of one block superposed in vertical alignment with the corresponding wall of the other block, each of said walls provided with horizontally extending cores, each block including a cellular construction merging at opposite ends into its associated walls, the lower block provided centrally of its cellular construction with an upstanding integral flat top rib, and a mortar joint having its upper surface in the plane of the top of the rib and projecting from both sides of the rib and extending between the superposed load transmitting walls.

8. A hollow building block provided with a pair of vertically extending parallel load carrying walls provided with at least one horizontally extending core, the lower faces of both walls being initially finished and disposed in a horizontal plane and each face provided with a longitudinally extending mortar receiving groove, a cellular construction integrally connecting the walls and including an upper and a lower horizontally extending web bridged between the walls and at least one of the webs provided with a groove extending symmetrically of the longitudinal medial plane of the block, said cellular construction including a vertically disposed central web having its upper and lower edges integral respectively with the upper and lower horizontally extending webs and said cellular construction including a pair of horizontally extending cores on opposite sides of said central web and defining the inner faces of the walls and the lower faces of each of said walls coacting with the adjacent portions of the lower horizontal web to provide lower mortar receiving faces to the block, each face being of greater width than the width of its associated wall.

9. A hollow building block provided with a pair of vertically extending parallel load carrying walls provided with at least one horizontally extending core, the lower faces of both walls being initially finished and disposed in a horizontal plane, a cellular construction integrally connecting the walls and including an upper and a lower horizontally extending web bridged between the walls and at least one of the webs provided with a groove extending symmetrically of the longitudinal medial plane of the block, said cellular construction including a vertically disposed central web having its upper and lower edges integral respectively with the upper and lower horizontally extending webs and said cellular construction including a pair of horizontally extending cores on opposite sides of said central web and defining the inner faces of the walls and the lower faces of each of said walls coacting with the adjacent portions of the lower horizontal web to provide lower mortar receiving faces to the block, each face being of greater width than the width of its associated wall.

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