Nov. 17, 1936. C. H. SCHUH 2,061,486

ART OF BUILDING CONSTRUCTION

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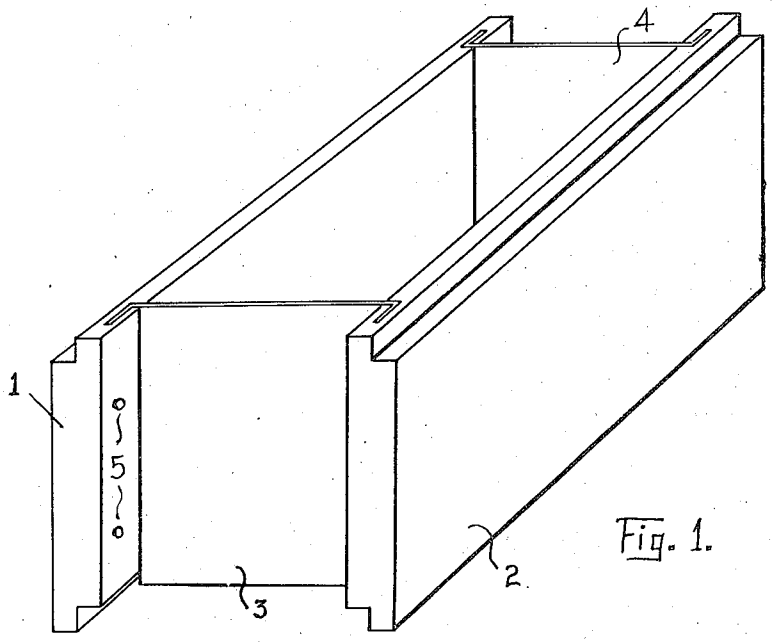

Fig. 1.

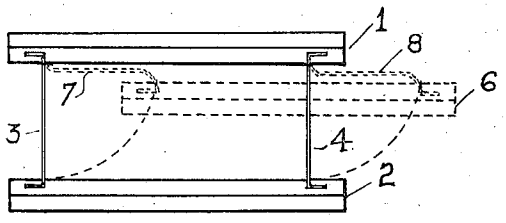

Fig. 2.

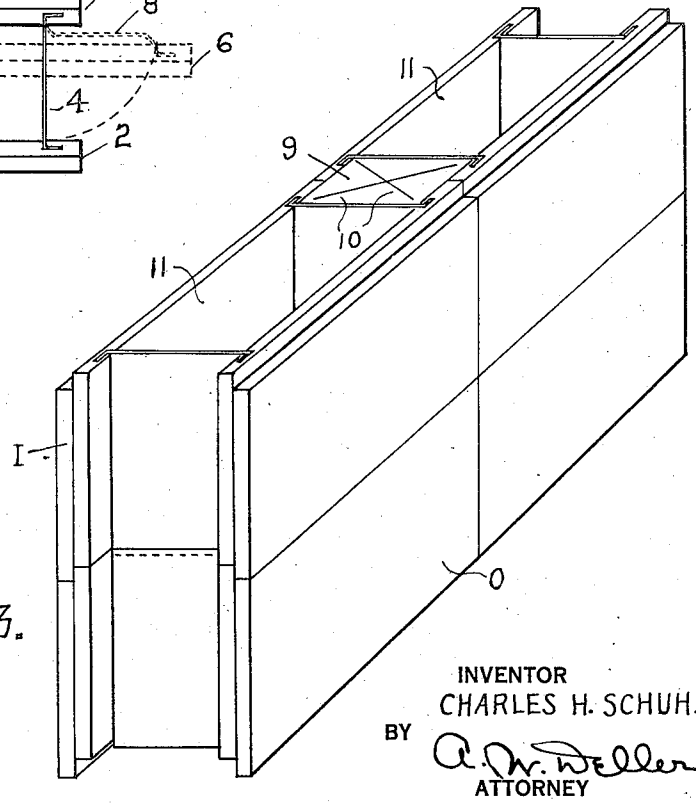

Fig. 3.

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ART OF BUILDING CONSTRUCTION

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8 Claims. (Cl. 72—44)

The present invention relates to the art of building and more particularly, to a collapsible building block especially adapted for use as a unit of building construction in the erection of various types of buildings, particularly the home dwelling.

It is well known that heretofore, the erection of a building has always required the use of considerable skilled labor. In the frame type of building, carpenters were required to put up the frame work, which has been a slow and expensive process. The brick type of building required masons and bricklayers for the erection of walls which was a slow and costly process. Furthermore, the finishing of both the interior and exterior of the building required the services of skilled mechanics of one or more of the following classes: plasterers, shinglers, stucco mechanics, kraftex mechanics, paper hangers, painters and decorators, etc. The employment of this type of labor has been expensive and in many cases the materials used have likewise been expensive. Although many attempts have been made to remedy the aforesaid situation and to provide the art with an economical type of building construction, but none, as far as I am aware, has been wholly satisfactory, practical and acceptable.

The object of the present invention is to provide a novel building and structural unit which is collapsible and by the use of which it is possible to erect a building easily and quickly and with the employment of unskilled mechanics.

A further object of the invention is to provide a building block, the two exterior surfaces of which are smoothed, polished, or otherwise finished whereby a wall may be erected having an interior and exterior which present an attractive and desirable finished appearance.

It is also an object of the invention to provide a building block which when erected will form a hollow structure comprising an outside wall of selected composition and thickness and an inside wall of selected composition and thickness which can be secured or fastened to concrete purlins of a predetermined size which are spaced apart at appropriate distances.

The invention likewise contemplates the provision of a building block of controlled physical properties including strength, weight, hardness, color, surface finish, appearance and the like.

It is within the contemplation of the invention to provide a building block which has a minimum weight and which is collapsible whereby its size is reduced to a minimum for shipping purposes, for facilitating packing and crating and for providing greater protection against damage to the surfaces of the block in transit.

Other objects and advantages of the invention will become apparent from the following description of a preferred embodiment of the invention, taken in conjunction with the accompanying drawing, in which:

Fig. 1 is a perspective view of a building block embodying my invention;

Fig. 2 illustrates a top plan view of my building block and shows in dotted lines one wall of the block in a collapsed condition; and

Fig. 3 depicts a perspective view of part of a wall constructed with my building blocks.

Generally speaking, my invention essentially comprises two spaced panels of predetermined size, composition and thickness which are held in parallel positions with respect to each other by two metal connectors or strips having enough elasticity to bend whereby the two panels may be brought together, thus forming a collapsible building unit. The metal strips are so placed and anchored that when the blocks are in normal position in the wall of a building said metal strips will form vertical, hollow ducts which, when filled with concrete and, if desired, with reinforcing elements, will constitute columns, purlins, or the like of proper dimensions properly spaced in the wall.

Referring more particularly to Fig. 1, the reference characters 1 and 2 designate two rectangular panels, preferably of molded cementitious composition. These two panels are connected by two metal spacing strips or connectors 3 and 4. The horizontal edges of the two panels are shown with off-sets which fit into and engage mating off-sets of another block. The vertical ends of these panels are shown without any off-set and are adapted to form butt joints when a plurality of blocks are placed end to end. To keep these butt joints tight while construction is in progress, a projecting screw is preferably provided at 5, around which wire may be wound joining one block with the next. Of course, off-sets, pins and the like may be used to join adjacent blocks to each other.

In Fig. 2 a plan view of my block is shown which illustrates in dotted lines the position of the panels of the block when folded up or collapsed for shipment. In this condition, panel 2 swings into the position of the dotted lines at 6 and the metal strips or connectors assume the position of the dotted lines at 6 and 7.

In Fig. 3, the inside sheeting or interior mem-

ber I of the wall comprising a plurality of panels and the outside sheeting or exterior member O comprising a plurality of corresponding panels are clearly shown. These interior and exterior members are reinforced by concrete purlins, columns or the like one of which is designated by the reference character 9. In practice these concrete purlins are cast in place as construction progresses by filling in with concrete or other cementitious material the vertical ducts formed by the metal spacing strips or connectors. In some instance, reinforcing members 10 may be incorporated in the purlin, etc. and may be located in diagonal relation to each other or the like. Between the concrete purlins, columns or the like in the wall are hollow chambers 11. If desired these hollow chambers may readily be filled with an insulating material or any other desired material.

The erection of a wall by use of the improved collapsible building block is a very simple matter and can be carried out by any unskilled mechanic. In setting the first layer of blocks in a bed of concrete, some care must be taken to have the blocks properly oriented so that the wall surfaces are perpendicular and the horizontal edges are horizontal and fall in a straight line as those skilled in the art will readily understand. After the first layer of blocks is set, it is merely necessary to place one block directly above another in the successive layers as may be clearly seen in Fig. 3. It is to be noted that the construction of the horizontal edges of the blocks is such as to prevent the blocks from slipping out of alignment in the same manner as the flanged wheels of a car prevent it from slipping off a track. Moreover, since no mortar has to be used between the edges of the blocks and since the blocks are molded or machined to very exact dimensions, both the inside and outside surfaces of the wall will be very smooth and the cracks between the blocks will be hardly perceptible. In practice, the blocks give the appearance of an inlaid surface. Of course, neat cement or some other smooth and fine cement or binder may be applied between the joints.

The vertical ducts in the wall may be filled with concrete as each successive layer is mounted in position or after several layers have been set in place. In filling in these vertical ducts with concrete, steel reinforcement rods may also be used to provide increased strength, if desired. It will be noted that when the wall is finished each panel is fastened to two concrete purlins and in fact, the whole wall acts as and constitutes a single unit. It is manifest to those skilled in the art that this type of construction provides maximum strength with minimum consumption of material.

It is to be noted that in carrying the invention into practice, a large variety of materials may be used without departing from the spirit and scope of the invention. Thus, for example, in Fig. 1, the two panels 1 and 2, may represent sheets of molded composition of cement and asbestos or of a clay product or a fibrous product. The metal strips or connectors 3 and 4 may be composed of any metal or suitable material capable of functioning in the same manner and may be molded into or fastened or hinged to the wall panels in a variety of ways without affecting the spirit of the invention. Furthermore, a modification of the edges of the panels, such as to provide an off-set on the two vertical edges similar to that on the horizontal edges, or to tongue and groove the edges so as to allow them to function in the same manner when placed in position in a wall, would obviously be within the purview of this invention.

I claim:—

1. A collapsible building block comprising two rectangular panels, and two imperforate rectangular strips of flexible metal having their ends rigidly fixed in said panels holding same in parallel spaced relationship and extending through the entire height of said panels, said panels being adapted to be brought together during transportation by bending said strips and to form after their erection vertical ducts with said strips capable of being filled out with a structural mass.

2. A collapsible building block comprising two rectangular panels, and two imperforate rectangular strips of flexible metals having their ends rigidly fixed in said panels holding same in parallel spaced relationship and extending through the entire height of said panels, said metal strips being normally perpendicular to the two panels and forming vertical ducts with the terminal portions of said panels and capable of being bent to bring said panels together during transportation.

3. A collapsible building block comprising two rectangular panels having their horizontal edges provided with off-sets to hold said panels in alignment in a wall, and two imperforate strips of flexible metal having their ends rigidly fixed in said panels holding same in parallel spaced relationship and extending through the entire height of said panels, said panels being adapted to be brought together during transportation by bending said strips and to form after their erection vertical ducts with said strips capable of being filled out with a structural mass.

4. A collapsible building block comprising two rectangular panels, engaging means provided on all edges of said panels for holding said panels in alignment in a wall, and two imperforate strips of flexible metal having their ends rigidly fixed in said panels holding same in parallel spaced relationship and extending through the entire height of said panels, said panels being adapted to be brought together during transportation by bending said strips and to form after their erection vertical ducts with said strips capable of being filled out with a structural mass.

5. A collapsible building block comprising two rectangular panels, projecting means provided on the inside of said panels for engaging fastening means adapted to hold the ends of said panels tightly together with the ends of adjacent panels in a wall, and two imperforate strips of flexible metal having their ends rigidly fixed in said panels holding same in parallel spaced relationship and extending through the entire height of said panels, said panels being adapted to be brought together during transportation by bending said strips and to form after their erection vertical ducts with said strips capable of being filled out with a structural mass.

6. A collapsible building block comprising two panels, two imperforate connectors made of flexible metal having their ends molded in said panels and adapted to hold said panels in parallel spaced relationship, said connectors extending through the entire height of the said panels and adapted to form vertical ducts of predetermined size in a wall construction for the accommodation of a structural element, said block being collapsible by bending said metal connectors.

7. A collapsible building block comprising two panels of different composition and thickness corresponding to the respective requirements of an inside and outside sheeting in a building wall construction, and two imperforate flexible metal connecting strips having their ends molded in said panels and extending through the entire height thereof, said panels being adapted to be brought together during transportation by bending said strips and to form after their erection vertical ducts with said strips capable of being filled out with a structural mass.

8. A collapsible building block having panels with finished surfaces on the inside and outside of the finished building wall, and two imperforate flexible metal connecting strips having their ends molded in said panels and extending through the entire height thereof, said panels being adapted to be brought together during transportation by bending said strips and to form after their erection vertical ducts with said strips capable of being filled out with a structural mass.

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