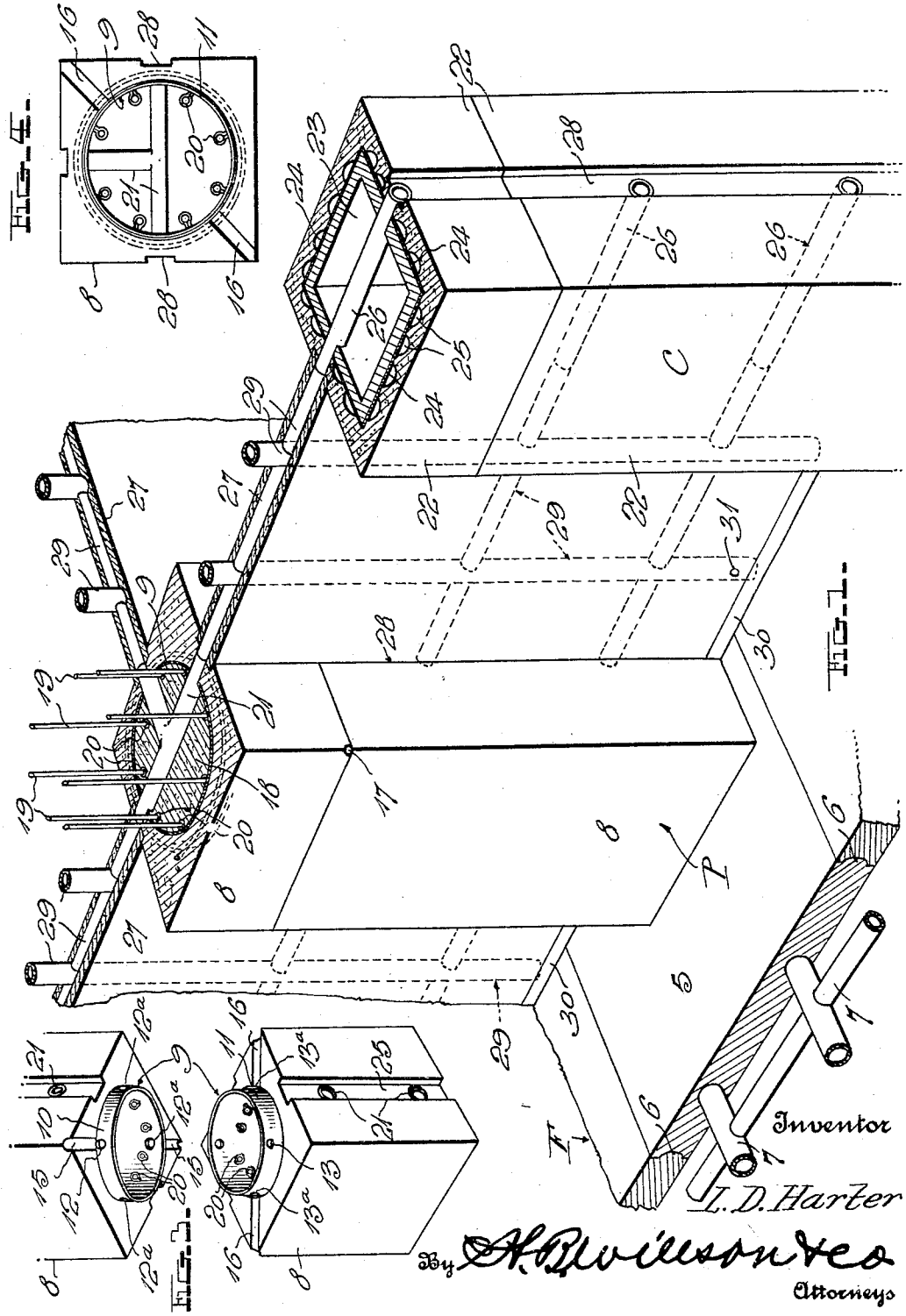
Jan. 19, 1932. L. D. HARTER 1,841,807

BUILDING CONSTRUCTION

Filed March 13, 1929 2 Sheets-Sheet 1

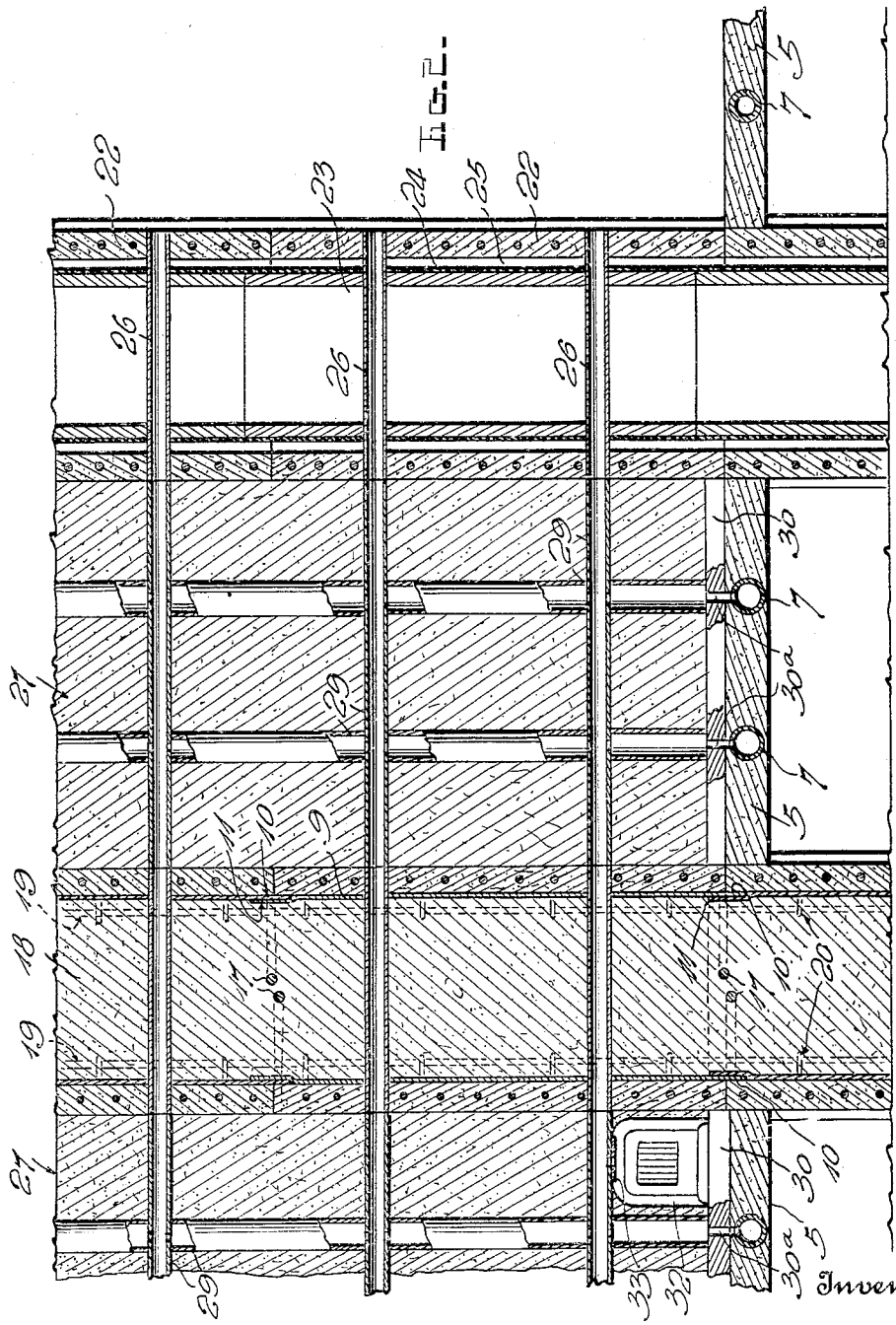


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UNITED STATES PATENT OFFICE

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BUILDING CONSTRUCTION

Application filed March 13, 1929. Serial No. 346,682.

The invention relates to the construction of monolithic buildings and has reference more particularly to a sectional construction whereby the various sections or units may be completely manufactured at a factory or plant and hauled or shipped to the points at which buildings are to be erected.

One object of the invention is to make novel provision whereby the various floors, walls, pilasters, etc., of the completed building may be virtually honey-combed with communicating pipes for the purpose of heating them in cold weather or for ventilation in hot weather, or whenever desired.

A still further object of the invention is to provide a novel pilaster construction in which unique means are provided for interlocking the superposed pilaster-forming blocks or sections.

Yet another aim is to make unique provision whereby an effective monolithic reinforced cement core may be formed in the pilaster, unique provision being made for holding reinforcing rods for this core in proper position prior to pouring of said core.

With the foregoing and minor objects in view, the invention resides in the novel subject matter hereinafter described and claimed, description being accomplished by reference to the accompanying drawings.

Fig. 1 is a sectional perspective view.

Fig. 2 is a vertical sectional view cut in a plane centrally intersecting the chimney and the pilaster shown in Fig. 1.

Fig. 3 is a perspective view showing two of the pilaster sections in juxtaposition.

Fig. 4 is an end elevation of one of the pilaster sections.

A floor F is shown formed from a plurality of monolithic slabs 5 supported in any desired way and preferably having tongue and groove connections 6 with each other. Embedded in the slabs 5 is a network of communicating fluid-conducting pipes 7, the arrangement of said pipes being such that the pipes of each slab 5 will communicate with those of the adjacent slabs, providing means whereby a fluid may be circulated within the entire floor for cooling or heating as may be desired. This same idea may of course be carried out with roofs and ceilings.

A pilaster P and a chimney C are shown extending through the floor F in spaced parallel relation with each other, each being of unique construction.

The pilaster P embodies a plurality of superposed blocks or sections 8 each of tubular construction, being formed about a large central vertical pipe section 9. The pipe section 9 projects downwardly from the block 8 as shown at 10 and projects upwardly from said block as shown at 11, the end 11 being contracted so that it may telescope with the end 10 of the superposed block. These ends 10—11 are formed with rod-receiving openings, end 10 being preferably provided with two relatively high openings 12 and with two comparatively low openings 12^a. End 11 is formed with two comparatively high openings 13 and with two openings 13^a disposed at a lower plane. The lower end of each block section 8 is formed with radial grooves 15 which communicate with the openings 12, and the upper end of each block 8 is provided with similar grooves 16 which communicate with the openings 13^a. When any two adjacent sections or blocks 8 are superposed with the pipe ends 10—11 telescoping as seen in Fig. 2, the openings 12 and 13 communicate with each other and the openings 12^a—13^a also communicate. Then, rods 17 may be passed through the grooves 15—16 and the registering openings as will be clear from Fig. 2, said rods and openings serving to effectively lock the superposed pilaster sections together. The central portions of these rods also form part of reinforcing means for poured cement cores 18 which are cast in the connected pipe sections 9 after the pilaster has been built up to any desired extent. To longitudinally reinforce the core 18, vertical rods 19 are provided. Instead of building up a reinforcing structure embodying these rods and inserting said structure in the connected pipe sections 9, I provide these sections with internal eyes 20 and simply slide the rods 19 downwardly through said eyes thereby effectively holding the rods in proper position while the cement is being poured.

At desired elevations, horizontal fluid-conducting pipes 21 are embedded in the pilaster sections 8 and obviously these pipes may be of straight form, or in the form of T's, elbows, etc., according to the conditions under which they are to be used.

The chimney C is formed of a plurality of superposed monolithic sections 22 within each of which is a smoke-conducting tile 23. The tile 23 projects above the upper end of section 22 and terminates above the lower end of said section, so that the sections 22 and the sections of tile will break joints as shown in Fig. 2. Around the tile 23 is a covering 24 of asbestos or other heat-insulating material, and the chimney section 22 is vertically grooved at 25 on a plurality of lines, being in contact with the covering 24 only between the grooves. This provides a construction in which expansion and contraction will be reduced to the minimum with no danger of breakage, and in which excessive radiation of heat is prevented.

Heat-conducting pipes 26 are embedded in the chimney sections 22 and extend horizontally across the interiors thereof, the vertical spacing of these pipes 26 being identical with the vertical spacing of the pipes 21 of the pilaster sections 8.

All vertical walls are formed of monolithic slabs such as those denoted at 27 and where any of these walls abut a pilaster P, a chimney C, or other analogous formation, one or the other may be provided with a vertical groove 28 to receive a portion of the other. The walls 27 shown in the drawings, rest upon two-by-fours or the like 30 to which interior trim may be secured, and the slabs for forming these walls are preferably of ceiling height. These slabs are provided with a network of fluid-conducting pipes 29 disposed horizontally and vertically, embedded in the slabs in communication with each other and disposed in such spaced relation that the horizontal pipes may communicate with the horizontal pipes 21—26 whenever a construction similar to that illustrated, must be produced. Fluid heated by passage through the pipes 26 (preferably air) travels into the pipes 29 of the contiguous wall or walls 27 and in the construction shown, this heated fluid may travel on through the pipes 21 of the pilaster P and into the pipes 29 of other walls. Moreover, by means of appropriate openings 30 (Fig. 2), the pipes 29 are placed in communication with the floor pipes 7 so that the heated fluid may pass also through these pipes. Virtually the entire structure is honey-combed with communicating pipes and either heated fluid may be passed through these pipes or relatively low temperature fluid may be permitted to circulate in them for cooling purposes or for ventilation. Ventilating openings such as 31 of Fig. 1 may be provided wherever desired and they may be controlled by appropriate dampers (not shown). Then too, wherever a solid, liquid or gaseous fuel heater such as 32 of Fig. 2 is desired, it may vent into one of the fluid-conducting pipes, communication being controlled by a damper 33. The products of combustion thus serve to further heat walls or other portions of the building.

It will be noted that by the use of the different blocks or units molded at the factory and then set up on the job, there will be no need of the use of forms for molding. This effects a great saving not only in time required to erect a building but also in the labor of setting up the forms and then later knocking them down and also in the expense of the forms and the wastage of material which results from the use of special forms or molds for each building.

I claim:—

1. In a building construction, two superposed pilaster sections, large vertical pipe sections embedded in said pilaster sections, said pipe sections being telescoped at the abutting ends of said pilaster sections and having radially alined openings in their telescoped portions, said pilaster sections having recesses from their exteriors to said openings, and rods passing through said openings and recesses to lock the pilaster and pipe sections together.

2. A structure as specified in claim 1; together with a cement core in said pipe sections embedding the intermediate portions of said rods.

3. A pilaster section comprising a block, and a large pipe section passing vertically through said block and projecting beyond an end thereof, said projecting end of said pipe section having diametrically alined rod-receiving openings, said end of the block being formed with radial rod-receiving grooves alined with said openings.

4. A pilaster section having a vertical core-receiving passage and provided with a plurality of eyes projecting inwardly into said passage, said eyes having the axes of their openings disposed vertically, whereby said eyes are adapted to receive vertical core reinforcing rods, thereby holding the rods in position while a cement core is being poured into said passage.

In testimony whereof I have hereunto affixed my signature.

LEANDER D. HARTER.