Oct. 18, 1927. 1,646,113

L. LANZA

CONSTRUCTION OF BUILDINGS

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Fig.1

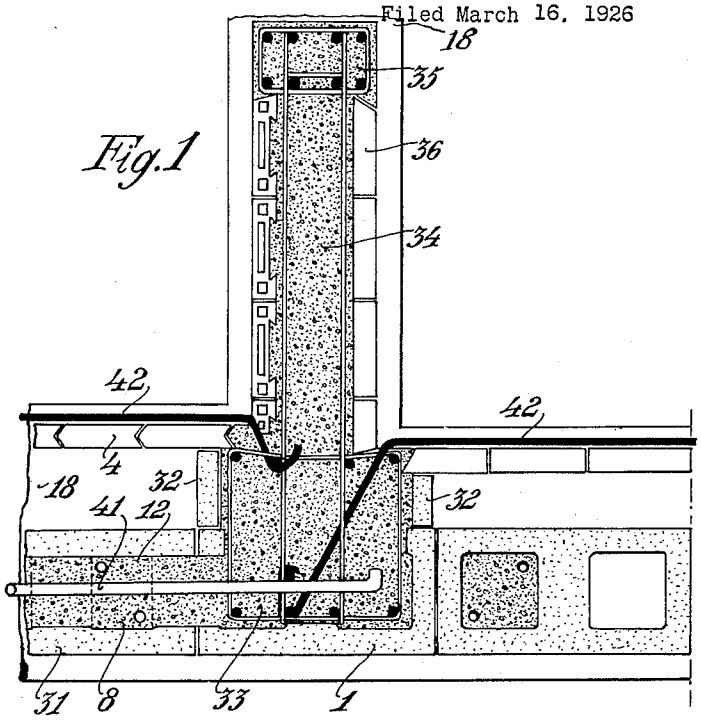
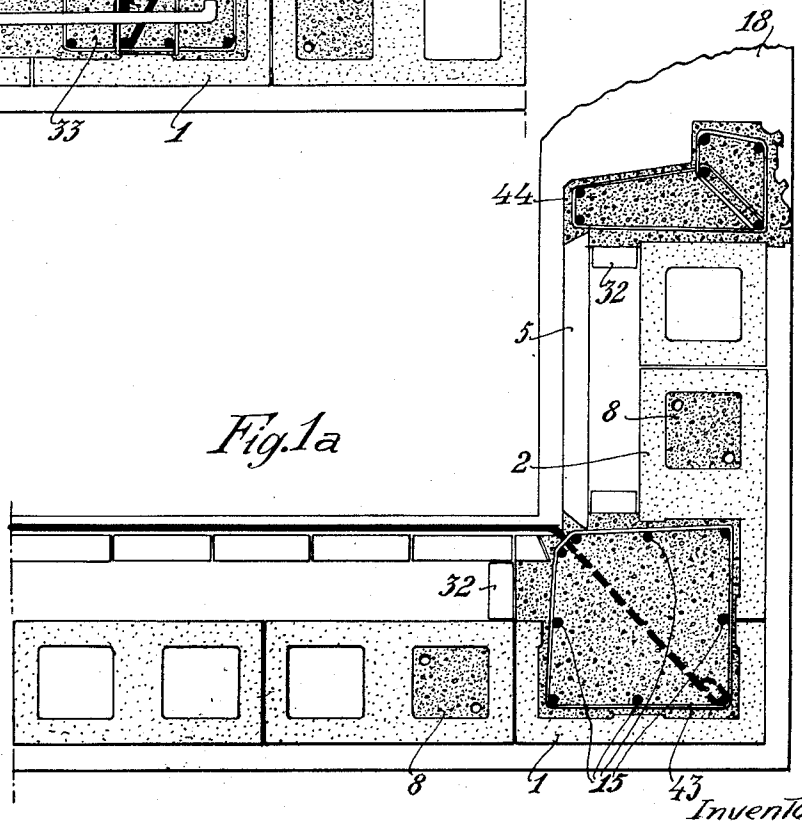


Fig.1a



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CONSTRUCTION OF BUILDINGS

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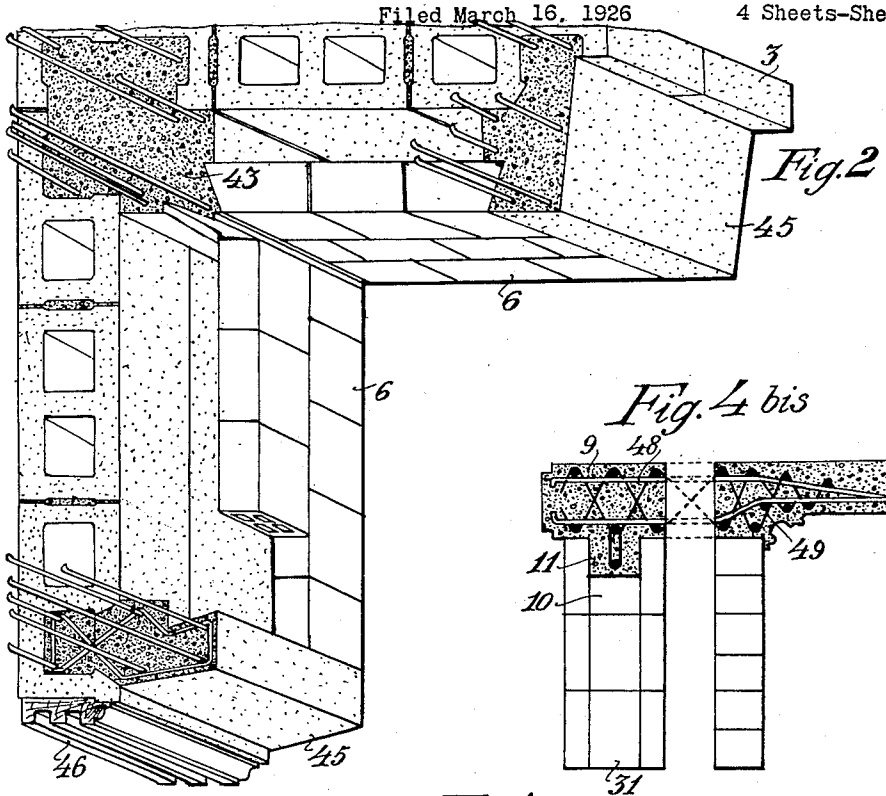
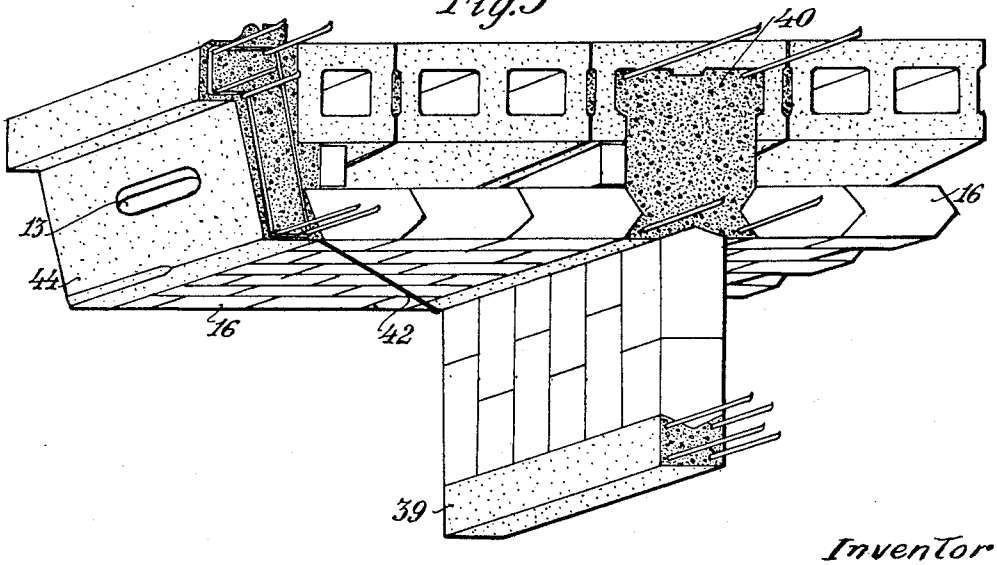


Fig. 2

Fig. 4 bis

Fig. 3



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Fig. 4

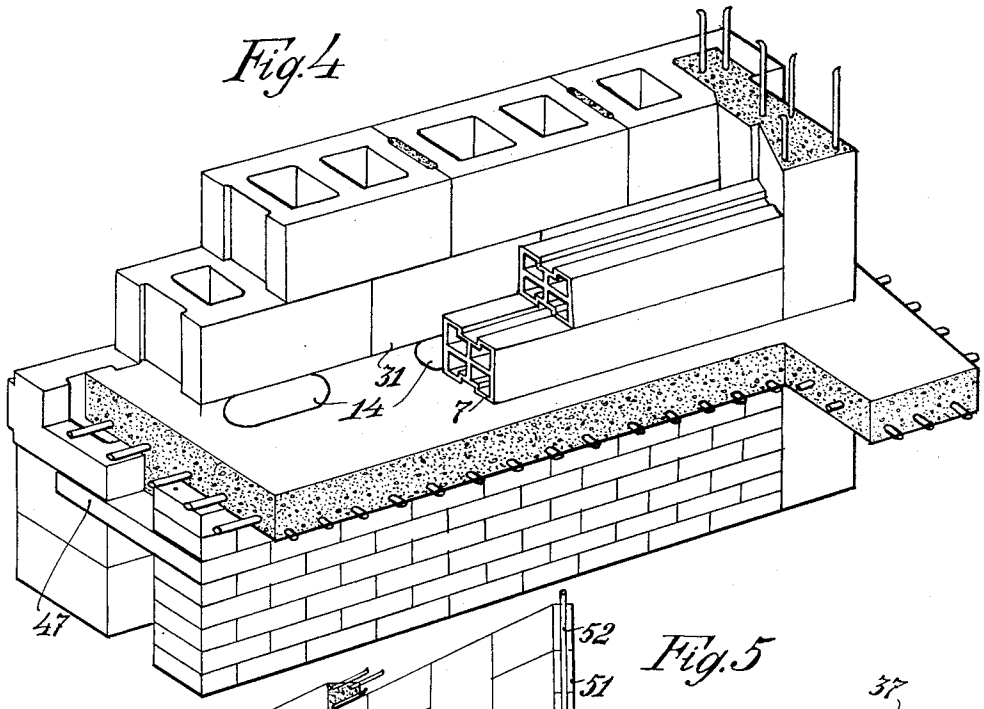
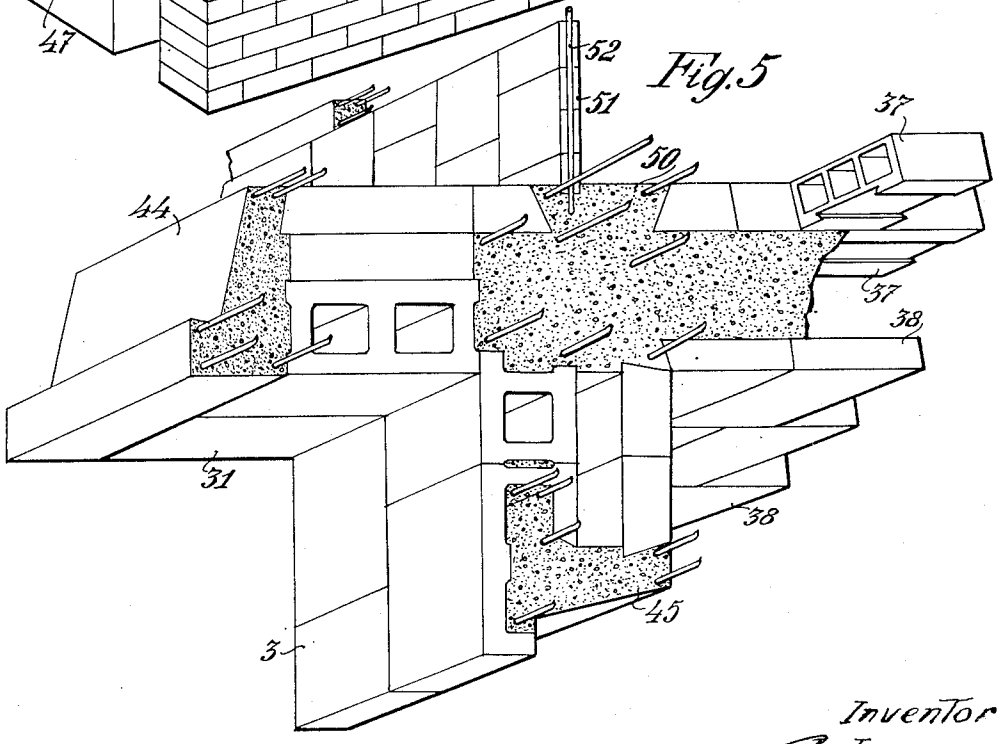


Fig. 5



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Fig. 6.

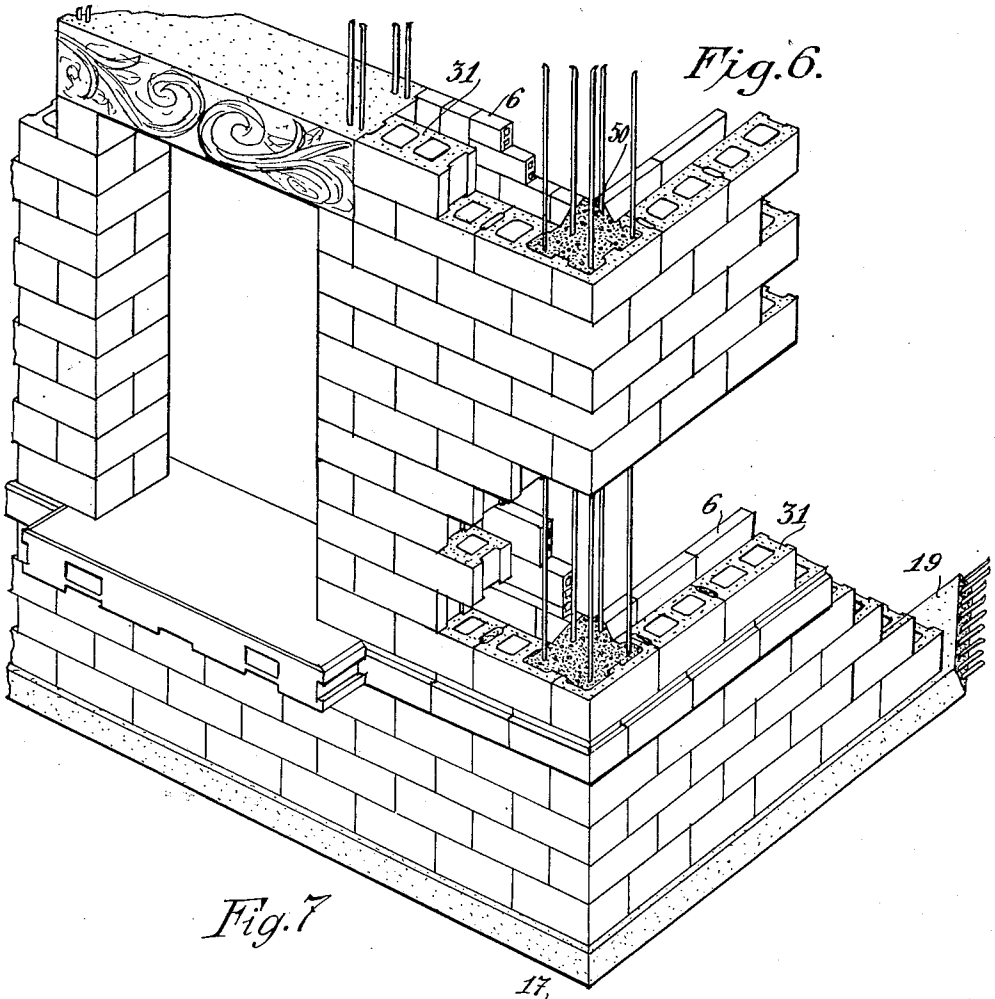
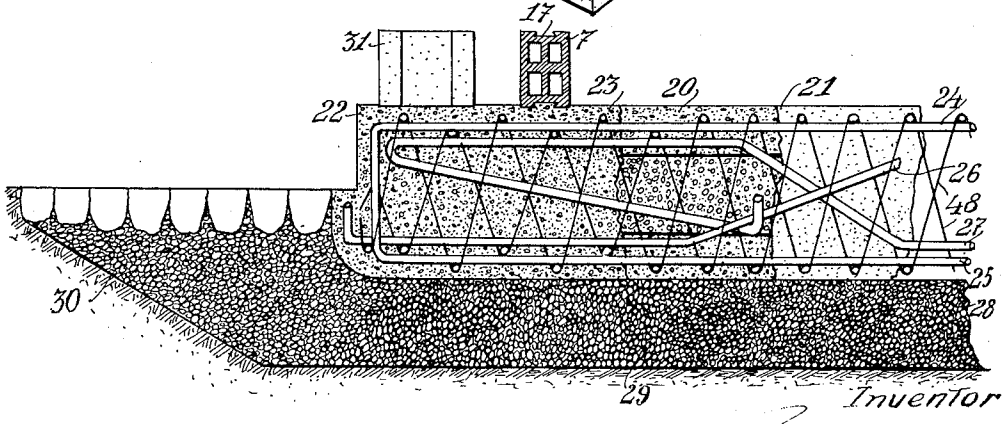


Fig. 7



Inventor

L. Lanza

by Co. Attys.

Patented Oct. 18, 1927. 1,646,113

UNITED STATES PATENT OFFICE.

LUIGI LANZA, OF PLATACI, ITALY.

CONSTRUCTION OF BUILDINGS.

Application filed March 16, 1926, Serial No. 95,127, and in Italy March 19, 1924.

The object of the invention is the construction of buildings designed more specifically to efficaciously resist earthquakes and earth tremors and to present a high degree of elasticity and good insulating qualities against moisture and variations of temperature. Another object of the invention is to obtain a light and economic and an almost fire-proof construction.

The invention is illustrated and will be described with reference to the accompanying drawings wherein

Figure 1 is a plan view of an outer wall in connection with an inner wall,

Figure 1ª is a horizontal sectional view showing a corner construction of an outer wall,

Figure 2 is a perspective view of an outside wall,

Figure 3 is a similar view showing further particulars of the construction,

Figure 4 shows more specifically the arrangement of the sole plate,

Figure 4bis is a detail view,

Figure 5 is a perspective view of a crossing of outer and inner walls,

Figure 6 is a view of a part of a wall and

Figure 7 is a sectional view of the foundation.

In the various figures, the numerals 33, 34, 35, 39, 40, 43, 44, 45, 50 indicate pillars of reinforced concrete, these pillars having varying conformation and dimensions according to the purpose which they are to serve, the pillars 33 and 34 being for example the pillars for the connection of inner walls, the pillars 35 and 39 those for door openings and the pillar 44 that for a window opening. The walls intervening between the pillars are constructed of hollow concrete blocks such as 1, 2, 3, 31 and of hollow or solid bricks such as 4, 5, 6, 7 and 16. These blocks and bricks are arranged and shaped, for example to L- and U-shape as the blocks 1 and 2 in Figure 1, so as to enclose the hollow to be filled with concrete for the conformation of the pillars, this arrangement avoiding the use of a special coffering for the formation of the pillars and secures a solid binding connection between the pillars and the blocks and the bricks. The concrete blocks and the bricks are spaced apart so that a continuous air-space is being formed between the two layers, this air-space being closed towards the pillars by bricks 32 and does thus not interfere with the formation of the pillars, or instead of the bricks 32 a wooden temporary coffering may be used when moulding the pillars. The concrete blocks are hollow as at 8 and these hollows may in part be filled with cementitious or like matter up to a certain height in order to provide for a decreasing weight of the building towards the roof. The filling of these hollows may for example reach the block 9 (Fig. 4bis) which has U-shape and forms together with the similarly shaped block 10 a channel 11 intended to lodge therein reinforcements 48, 49, the reinforcements 48 extending into the pillars so as to form a binding of reinforced concrete round the building. The pillars may further be provided with additional reinforcements 15 which too are made to extend up to a certain height only, for example up to the height of the blocks 9. The layer of blocks 9 serve to sustain the sole plate of the building, but instead of it a slab 47 may be used for this purpose as shown in Figure 4. The bricks are preferably dove-tailed so as to allow their being bound together by cement or the like and being reinforced where desired.

The inner walls may be built up with a concrete layer as shown for the walls forming the prolongations of the pillars 33, 34 and they have ordinary bricks 36 or preferably dove-tailed bricks 37, 38 bound to them by the concrete. The pillars may be provided with suitable recesses such as 39, 40 to attain an efficient binding between them and the inside walls departing therefrom.

The hollows of the blocks together with openings 13, 14 serve for ventilation purposes and for the provision of the necessary pipings and the like. 41, 42 are reinforcements departing from the pillars and proceeding along the walls in horizontal or diagonal direction.

The whole construction may be arranged on a foundation 18 where the building is not intended to resist earth-quakes, but where the building is intended for regions exposed to strong telluric movements a reinforced concrete foundation 19 may be employed as shown in Figure 6, Figure 7 being a sectional view of a foundation intended particularly to prevent the building being damaged by earthquakes.

This foundation comprises a sole plate on a bedding of sand and gravel 28, 29, 30 and consisting of spaced ribs 22 covered on their

upper and lower face by layers 20 of reinforced concrete, the hollows formed by these layers and the intercrossing ribs being filled with sand and gravel, section 23—21 Figure 7. The reinforcements of these parts consist of parallel extending upper and lower bars 24, 25 and of interlinking bars 26, 27 which along part of their length are parallel to the bars 24, 25. Wires 48 wound round the bars 24, 25, complete the reinforcement. The end of the foundation is sledge-shaped, the oblique arrangement of the gravel as at 30 preventing all resistance to movements of the foundation.

What I claim is:

A building structure comprising pillars of reinforced concrete, an outside layer of hollow concrete blocks formed in part to enclose the pillars and in part hollow to receive a concrete reinforce, and bricks extending between the pillars and forming with the blocks and intervening vertically extending air space, the concrete pillars having extensions to project between the hollow blocks and bricks.

In testimony whereof I have signed my name to this specification.

LUIGI LANZA.