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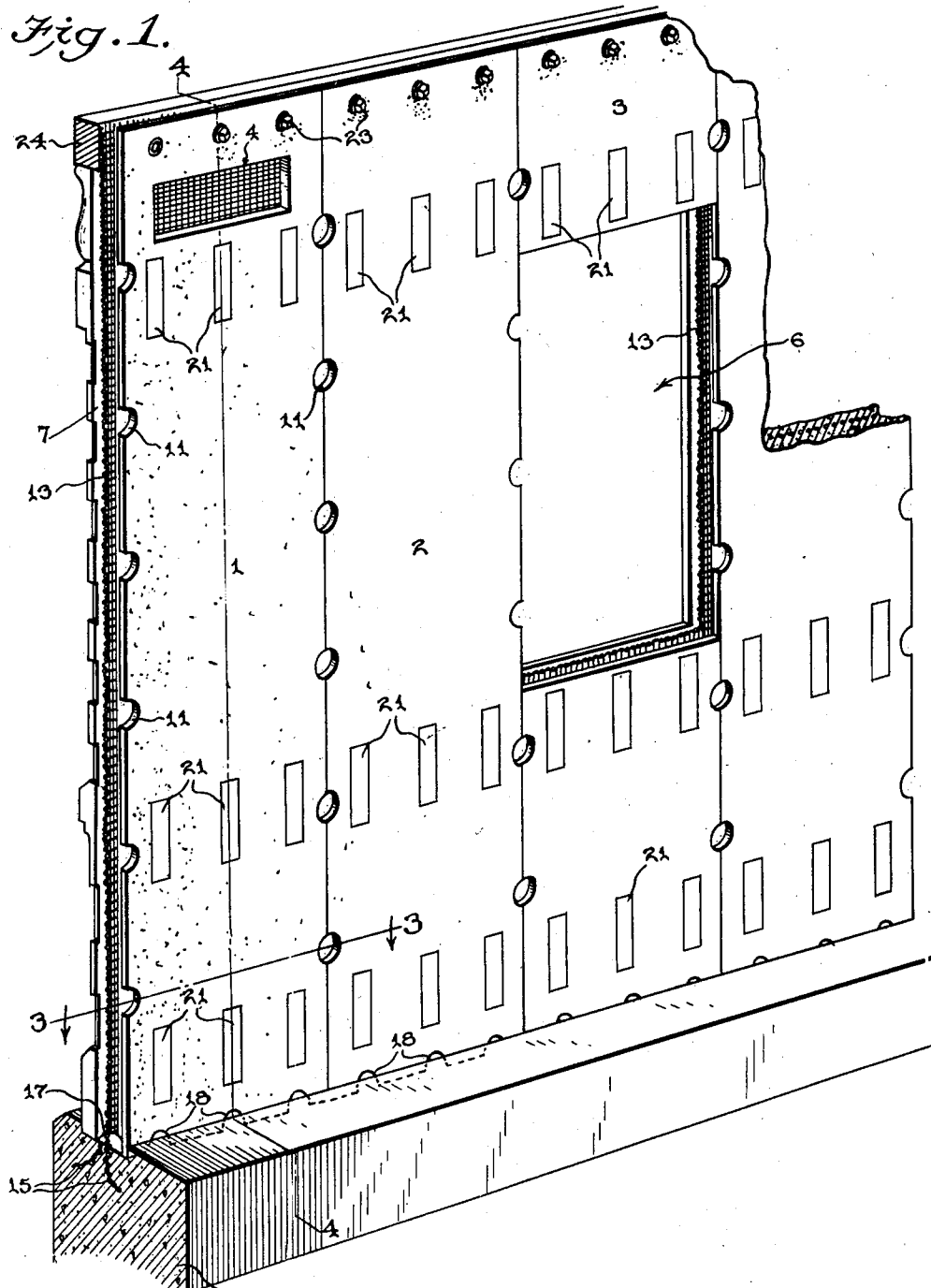
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BUILDING CONSTRUCTION

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3 Sheets-Sheet 1

Fig. 1.



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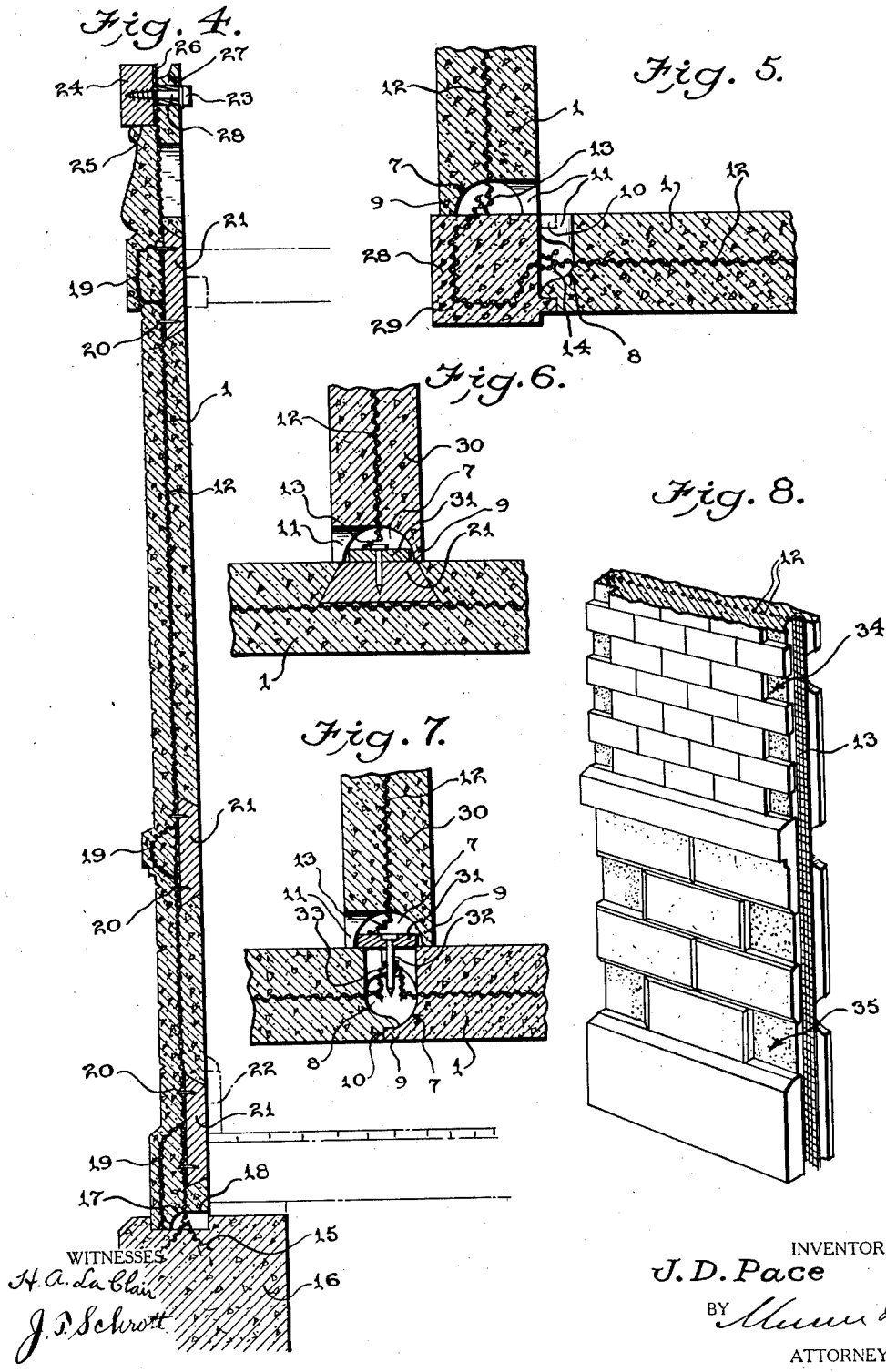
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UNITED STATES PATENT OFFICE.

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BUILDING CONSTRUCTION.

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This invention relates to improvements in building constructions, and it consists of the combinations and arrangements herein described and claimed.

5 An object of the invention is to provide an arrangement of pre-cast slabs which may be externally ornamented and otherwise completely finished so as to constitute a complete part of the building when erected
10 therewith, the slabs having appropriate reinforcing elements incorporated therein, and also having provision for bonding successive slabs together.

5 Other objects and advantages appear in the following specification, reference being had to the accompanying drawings, in which—

7 Figure 1 is a sectional perspective view of a portion of a building construction illustrating the use of the improved slabs.

20 Figure 2 is an elevation of a portion of the building construction illustrating the external appearance of the slabs.

25 Figure 3 is a detail horizontal section taken substantially on the line 3—3 of Figure 1.

Figure 4 is a central vertical section taken substantially on the line 4—4 of Figure 1.

30 Figure 5 is a detail cross section illustrating a corner construction.

Figure 6 is a detail cross section illustrating how a partition is joined to the wall.

35 Figure 7 is a detail cross section illustrating the application of the partition when such partition happens to fall upon a slab joint.

40 Figure 8 is a detail perspective view of a portion of one of the slabs, showing more clearly how portions are removed so that joints can be made without showing overlaps.

45 It is a purpose of the invention to make possible the expeditious and comparatively inexpensive yet sturdy and durable construction of buildings principally for dwelling purposes. To these ends use is made of slabs which are pre-cast in order to be ready for immediate building purposes, the slabs being so prepared at the edges that by
50 pumping in or otherwise injecting cement at the joints, the slabs can be firmly bonded together to make a homogeneous structure.

That side of the slabs which will ultimately constitute the exterior of the building will be suitably ornamented.

55 Figure 1 illustrates a partly constructed building and shows the use of slabs 1, 2 and 3. The reason for thus distinguishing the slabs is this: The slab 1 differs from 2 and 3 by having an opening 4 near the top for
60 the purpose of ventilation, the reinforcing element of the slab being exposed at the opening and appearing as a screen. The slab 2 does not have an equivalent of the opening 4 but it does have the reinforcing
65 element. In practice, slabs having screen panels will be used at such intervals as may be deemed proper.

The so-called slab 3 is really a sectional slab, that is to say, a portion is omitted
70 from the substantial center in order to leave an opening 6 in which a window frame will subsequently be fitted. The description of the slab 1 applies for all.

75 Running with the longitudinal edges of the slab 1 are grooves 7 and 8 (Figs. 1 and 3) of these the groove 7 is the larger, and the slab terminates in tongues 9 at the same edge in which this particular groove occurs.
80 The groove 8 is narrower than the groove 7, and the formation of the slab along this edge is such as to produce channels 10 in which the complementary tongues 9 of a succeeding slab are fitted during the course
85 of construction.

A plurality of semi-circular openings 11 lead into the respective longitudinal grooves 7 and 8, and when two or more slabs are fitted together (Fig. 1) these openings be-
90 come round holes through which cement is pumped or otherwise injected into the then complete longitudinal bores. The grooves 7 and 8 when placed together form the longitudinal bores mentioned.

95 A reinforcing element 12 is molded in the slab. This element may consist of expanded metal, heavy wire screen or the like. The longitudinal edges of the element are exposed at 13 and 14 along the longitudinal
100 grooves 7 and 8. The extent of exposure is such that 13 will overlap with 14 when another slab is placed in the proper position, this overlap insuring the bond between the slabs. The exposed portions are also

preferably provided with selvage edges. It is undesirable to have rough, protruding wire ends.

The reinforcing element is appropriately spread at 15 at the bottom (Figs. 1 and 4) so that the slab can be bonded with the concrete foundation 16. The spread portion 15 appears at a transverse groove 17 which extends from side to side of the slab. A plurality of semi-circular holes 18 communicate with the transverse groove, the upper ends thereof being permitted to appear above the upper surface of the concrete foundation 15 so that cement may be injected into any existing space in what was originally the transverse groove.

The reinforcing element 12 also includes outstanding portions 19 (Fig. 4) to furnish a suitable support for heavier portions of the ornamentation. The reinforcing element is stapled or otherwise secured at 20 to one or more dove-tailed blocks 21, one surface of which is exposed on the interior surface of the slab (Fig. 1) thereby to be accessible for the purposes of nailing on a mop board 22 (Fig. 4) or the like.

Lag screws 23 are used to secure a wooden plate 24 to the building construction resulting from assembling a number of the slabs, this plate being used as a means to secure the roof of the house. The plate 24 occupies a recess or rabbet 25, the thickness of the slab being reduced to such an extent at this point that the reinforcing element 12 is exposed as at 26. This exposed portion extends into a transverse concavity 27 or groove at the top of the slab, this groove being for the purpose of receiving cement so that a good joint may be made with the plate 24. The lag screw 23 works against a sleeve 28 which is appropriately incorporated in the slab.

Figure 5 illustrates how the joint is made at the corner of the building. The slabs 1 are recognized as having the longitudinal grooves 7 and 8. The adjacent longitudinal edges are made to abut the sides of a corner post 28. This post is made of concrete, and has a reinforcing element 29 imbedded therein. The ends of this element are exposed at the sides of the post so that they may be made to overlap with the exposed portions 13 and 14 of the reinforcing elements 12 on the same principle and for the same purpose brought out in connection with Figure 3. The openings 11 permit the injection of cement so that good joints can be made.

In Figures 6 and 7 the problem is to connect the partition 30 with the adjacent wall. Such ones of the blocks 21 that happen to fall in the proper location are used to support a vertical furring strip 31. This strip is nailed to the blocks in question. The longitudinal groove along the adjacent edge

of the partition receives the furring strip, and when the cement is injected at the openings 11, the resulting bond provides a very secure and tight connection. In casting the partition or slab 30 the ornamentation appearing on the wall slabs is usually omitted, although it may obviously be made if desired.

Figure 7 illustrates the arrangement where the edge of the partition 30 coincides with the joints between two wall slabs. The furring strip 31 is now nailed or otherwise secured at 32 to a bent piece of reinforcing structure 33 which is sufficiently small to fit in the bore composed of the confronting grooves 7 and 8 yet sufficiently heavy to hold the points of the nails. The nails will be driven in at the holes 11.

Figure 8 illustrates how portions 34 and 35 of the imitation bricks and blocks are omitted thereby to provide recesses subsequently to be filled in with cement which is shaped while in the plastic state to agree in appearance with contiguous bricks or blocks as the case may be. In Figure 2 one of the complete recesses is shown at 36. The manner of filling in the recesses with plastic cement and shaping it to conform with the surrounding design is suggested at 37. The arrangement not only provides for total concealment of the joints between adjoining slabs but also aids in completing the bond.

The operation of constructing a building with the improved slabs is readily understood. It is apparent from the foregoing description that the slab 1 (for example) has a groove on each of the four edges. The longitudinal grooves 7 and 8 form longitudinal bores when two or more of the slabs are set together in the vertical position when building a wall as in Figure 1. These bores have communicating holes 11 through which cement is injected, this cement being intended to settle around the overlapping exposed ends 13 and 14 of the reinforcing element 12 thereby to make a strong bond. It is preferable to provide a plurality of the openings along the joint between a pair of slabs rather than to depend on pouring the cement into the bore from the top, because in the former instance all of the spaces may be filled up from the bottom whereas in the latter instance voids might be left.

The same principle of bonding obtains at the bottom and top of the slab. The holes or openings 18 permit injecting the cement into the bottom transverse groove 17. The top transverse groove 27 hardly requires openings because, being exposed at the top, the bonding cement can readily be poured in. But in view of the disclosure, it is deemed an obvious expedient to also provide the top of the slab with such openings.

An appropriate mold permits casting the

slab with any desired design. The drawings show the slab as having a bottom course of heavy blocks, an intermediate portion resembling bricks and an upper portion resembling a balustrade. The design may obviously be varied. Having settled upon the design of the mold the plastic material is poured in to a sufficient depth after which the reinforcing element 12 is laid upon the material. The blocks 21 are previously stapled or otherwise affixed to the reinforcing element. The rest of the plastic material is then poured in and struck off level with the blocks 21. Should any of the blocks be found higher than necessary, they may be tapped down into the soft material until the whole surface is level.

While the construction and arrangement of the improved building construction is that of a generally preferred form, obviously modifications and changes may be made without departing from the spirit of the invention or the scope of the claims.

I claim:—

1. A slab having grooves along abutable longitudinal edges, said grooves forming bores when a plurality of slabs are placed together in wall formation, a reinforcing element incorporated in the slab having portions exposed along said grooves to overlap with corresponding portions of adjacent slabs, said slabs having portions removed along certain edges to form openings when a plurality of slabs are set together.

2. A slab having a groove along an abutable edge providing a pair of tongues and forming a continuous bore when the slab is placed in an abutting position, said slab having tongue portions removed to constitute openings communicating with the bore.

3. A wall construction comprising slabs

having grooves along each of the longitudinal and transverse edges, one of the longitudinal grooves of each of the slabs being the larger and terminating in tongues, the other longitudinal groove being the smaller and having adjacent channel formation for the reception of the tongues of a contiguous slab, the contiguous grooves of two adjacent slabs constituting a bore, reinforcing elements incorporated in said slabs being exposed at each of the grooves, said reinforcing elements of adjacent slabs overlapping in the bores, said slabs having a plurality of removed portions constituting openings, and a cementitious material in said bores and openings.

4. A wall construction comprising a wall slab having a longitudinal edge groove providing a pair of tongues, a reinforcing element incorporated in the slab having a portion exposed along said groove, a corner post with which the tongues are abutable thereby forming a bore and having a reinforcing element exposed along one side to enter said groove and overlap the foregoing reinforcing element portion, one of said tongues having a plurality of removed portions constituting openings communicating with said bore.

5. A slab having a groove along each of the longitudinal and transverse edges, one of the longitudinal grooves being the larger and terminating in tongues, the other longitudinal groove being the smaller and having adjacent channel formations, said slab having a plurality of removed portions providing openings communicating with an adjacent groove, and a reinforcing element incorporated in said slab and being exposed at each of the grooves.

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