J. BELLINGHAM.

CONCRETE BUILDING SLAB.

APPLICATION FILED APR. 14, 1916.

1,294,224. Patented Feb. 11, 1919.

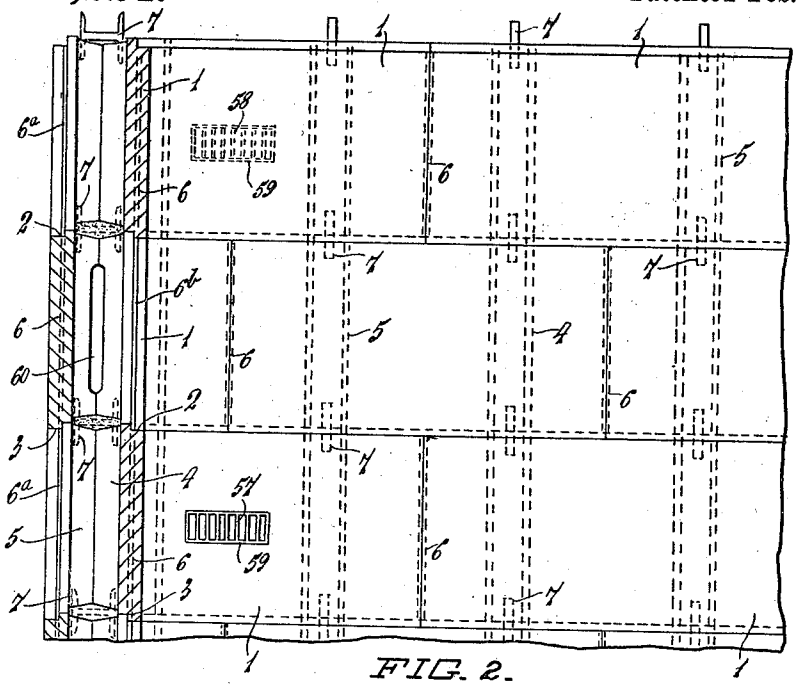


FIG. 2.

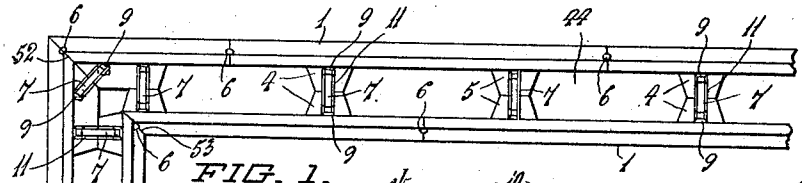


FIG. 1.

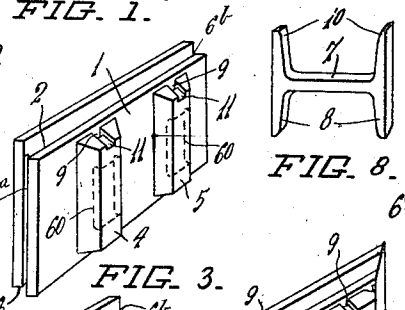


FIG. 3.

FIG. 8.

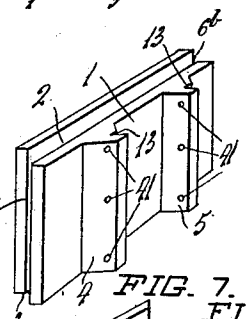
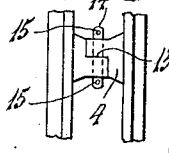


FIG. 7.



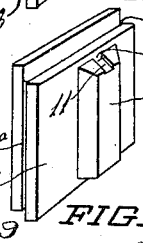


FIG. 4.

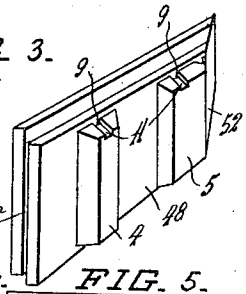


FIG. 5.

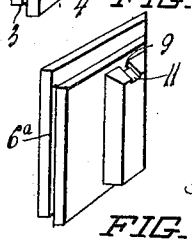


FIG. 6.

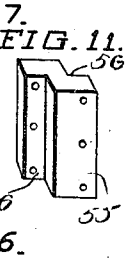


FIG. 11.

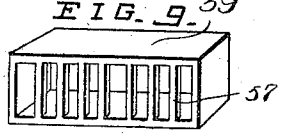


FIG. 9.

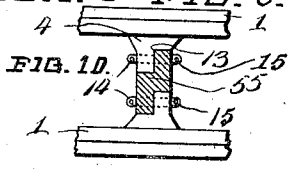


FIG. 10.

J. Bellingham.
Inventor.

By Albert G. Parker
Attorney.

UNITED STATES PATENT OFFICE.

JOHN BELLINGHAM, OF MASTERTON, NEW ZEALAND.

CONCRETE BUILDING-SLAB.

1,294,224. Specification of Letters Patent. Patented Feb. 11, 1919.

Application filed April 14, 1916. Serial No. 91,033.

To all whom it may concern:

Be it known that I, JOHN BELLINGHAM, a citizen of the Dominion of New Zealand, and residing at Masterton, in the Provincial District of Wellington, in the Dominion of New Zealand, have invented certain new and useful Improvements in Concrete Building-Slabs, of which the following is a specification.

This invention relates to slabs or blocks (hereinafter referred to as slabs) made of concrete or the like, and used in the construction of walls and other parts of buildings. Heretofore it has been the usual practice to make walls of buildings with studs or bars, or a framing to which the slabs were secured. The studs, bars or framing also served as distance pieces for keeping the layers of slabs at a proper distance apart.

By my invention the use of studs, bars, framing or the like for erecting the slabs is dispensed with; and the invention comprises the making of studs integral with the slabs, which are thereby strengthened, and as the slabs are placed in position, the studs also are built up and serve the purpose of distance pieces for keeping opposing or inner or outer layers of slabs at correct distances apart in the construction of hollow walls. The studs are made in half parts forming half studs, which are integral with the slabs and are connected together by metal keys and by a facing of liquid cement, enameling or the like. The keys also unite and hold in position the superposed courses of slabs. The half studs may be further secured together by forming rabbets in their faces, pins being passed through the rabbets and retained by keeper rods. When it is desired to build a wall of increased thickness spacing blocks are inserted between the half studs and secured to the rabbets.

The half studs are so located upon the blocks that the bond of the blocks is accurately kept with a minimum of trouble, the operation of placing the studs in juxtaposition resulting in the bond being kept.

The invention will now be described in detail, and for that purpose reference will be made to the accompanying drawings, wherein:—

Figure 1, is a plan of a wall embodying the invention,

Fig. 2, is a sectional elevation on line A—A, Fig. 1.

Fig. 3, is a perspective view of a slab,

Fig. 4, is a perspective view of a half slab,

Fig. 5, is a perspective view of a miter ended slab of an outer layer of slabs,

Fig. 6, is a perspective view of a miter ended half slab,

Fig. 7, is a perspective view of a slab with rabbeted studs,

Fig. 8, is a perspective view of a key.

Fig. 9, is a perspective view of a ventilator,

Fig. 10, is a plan of a spacing block in position, and

Fig. 11, is a perspective view of a spacing block.

The slab 1 is made in any desired size and thickness, the upper and lower edges having rabbets 2 and 3 respectively. Half studs 4 and 5 are cast integral with and strengthen each slab 1, and the half studs of one layer of slabs are united to the half studs of an opposing layer of slabs by a layer of cement or the like, and the edges of the blocks are united by cement or the like, which is poured down holes 6 formed by making grooves 6^a and 6^b in the ends of the slabs. The half studs of opposing slabs are further united by metal keys 7 made H shape as shown in Fig. 8. The lower members 8 of the key are inserted in recesses 9 formed in the upper ends of the half studs 4 and 5 and secured therein by cement. The upper members 10 of the key 7 are inserted in recesses formed in the lower ends of the half studs 4 and 5 and corresponding to the recesses 9, cement being used as before to secure the key to the slab. Grooves 11 leading from the recess 9 are formed in the ends of the studs to receive the crossbar of the key 7. When the members 8 and 10 of the keys are inserted in the recesses 9 as described, the opposing or inner and outer layers of slabs are united together, and the superposed courses of slabs are also united by the keys.

Fig. 7 shows half studs with rabbets 13 and one pair of half studs in Fig. 1 is shown with rabbets. Pins or plates 14 pass through the overlapping rabbets of the studs and vertical keeper wires or rods 15 are passed through holes in the pins to prevent the same from withdrawing.

The slabs 1 are laid in courses with their ends butting together and with the rabbeted edges of one course of slabs taking into the rabbeted edges of the next course. Liquid

cement or the like is poured into the holes 6 and a layer of cement or the like is applied to the rabbeted edges of the slabs and to the opposing faces of the half studs. The keys 7 are placed in the recesses 9 and floated around with cement.

A strong, durable, waterproof and sanitary wall of excellent appearance is thus built without the aid of framing, panels, shutters or boarding, thereby reducing the cost of construction.

The wall may be reinforced, if desired as when a lengthy wall is to be made, by filling any of the hollows 44 with concrete.

A wall is made of increased thickness by altering the thickness of the half studs 4 and 5, and thereby spacing the layers of slabs apart and when it is desired to make a wall of considerably increased thickness distance blocks or pieces 55 are used. These blocks are made with rabbets 56 which fit into the rabbets 13. Pins or plates 14 hold the said blocks in position, see Figs. 10 and 11.

The centers of the half studs 4 and 5 are located at a distance from the ends of the slabs equal to one fourth part of the total length of the slab. By spacing the half studs apart in this manner the bond of the slabs is maintained.

Ventilation is provided by inserting gratings 57 and 58 in the inner and outer layers of slabs respectively. The gratings have a casing or flange 59 see Fig. 9 around which the concrete when forming the slab is cast. Ventilation between the slabs laterally is provided by forming recesses 60 in the half studs 4 and 5 as shown in Fig. 2 and by dotted lines in Fig. 3.

What I do claim and desire to secure by Letters Patent of the United States is:—

1. A building structure, comprising walls arranged at an angle to each other, each wall including inner and outer parallel corner units, the inner and outer units of each wall having projections extending into face abutting relation with each other and the projections of the two outer units extending into abutting relation, and connecting members interlocking respectively with the abutting projections of the inner and outer units of each wall and the abutting projections of the two outer units.

2. A building structure, comprising walls arranged at an angle to each other, each wall including inner and outer parallel corner units, the inner and outer units of each wall having projections extending into face abutting relation with each other and the projections of the two outer units extending into abutting relation, opposed apertures formed in the abutting projections of each pair of inner and outer units and other opposed apertures in the abutting projections of the outer members and a connecting member interlocked with each pair of opposed apertures.

In testimony whereof I have signed my name to this specification in the presence of two witnesses.

JOHN BELLINGHAM.

Witnesses:
EDNA J. COLLEY,
OTHO. W. WILTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."