

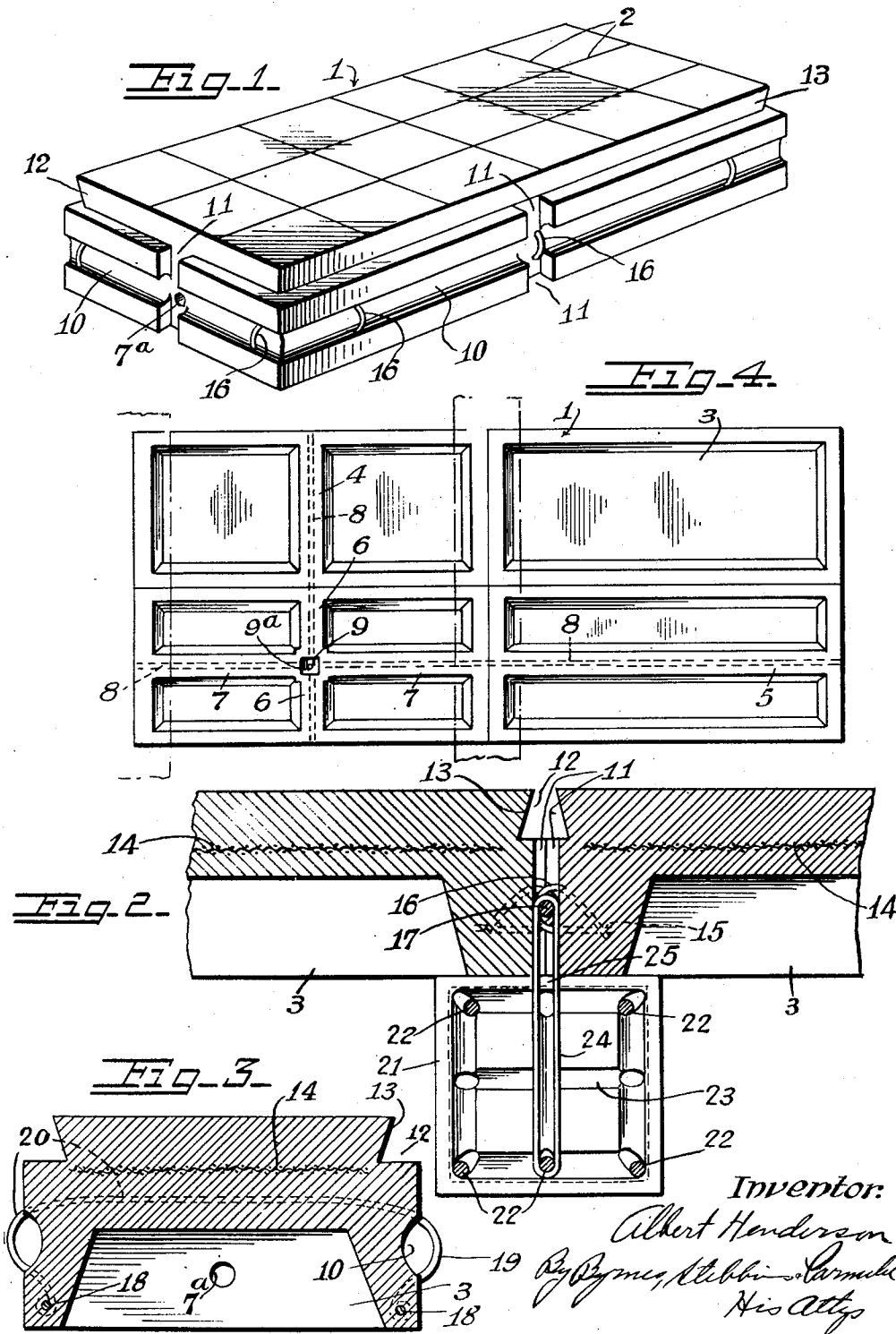
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A. HENDERSON

CONCRETE SLAB

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By Pyms, Attkin & Carmichael

His Atty

UNITED STATES PATENT OFFICE.

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CONCRETE SLAB.

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To all whom it may concern:

Be it known that I, ALBERT HENDERSON, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Concrete Slabs, of which the following is a specification.

The primary object of this invention is to provide a reinforced concrete slab which may be employed universally in the production of structural building elements, and a further object of the invention is to provide novel means whereby the slab may be secured in various combinations in a building or other structure. The invention also has for its object the provision of a novel construction whereby windows, doors, or similar elements may be connected with or supported by the slab, and other objects of the invention will appear incidentally in the course of the following description. The invention is illustrated in the accompanying drawings and resides in certain novel features which will be particularly pointed out in the claims following the detailed description.

In the drawings—

Figure 1 is a perspective view of a reinforced concrete slab embodying my present invention;

Figure 2 is a sectional elevation showing the manner in which the slabs may be supported upon and connected with a beam in order to form a floor;

Figure 3 is a transverse section of the slab;

Figure 4 is a bottom plan view showing permissible variations in the under side of the slab.

My invention relates to that art in which reinforced concrete slabs are cast or molded or otherwise produced at a central plant or factory and then shipped to the point of use. In my present invention, the slab 1, shown more particularly in Figure 1, may be of any preferred dimensions, although it will be more commonly of the general oblong form shown. The upper surface of the slab may be scored, as indicated at 2, so that, when combined to form a floor, the finished

floor will have the appearance of tiling. The bottom of the slab is chambered, as shown at 3, whereby to reduce weight, and the chamber 3 may be substantially co-extensive with the bottom of the slab and surrounded by the edge walls thereof, as shown in Figure 3, or may be interrupted by a rib or ribs as shown in Figure 4. This figure shows four slabs, one having an uninterrupted recess, another having its recess interrupted by a transverse rib 4, another having its recess interrupted by a longitudinal rib 5, and another having its recess interrupted by two intersecting ribs 6 and 7, one extending transversely and the other longitudinally of the slab. Openings 7^a may be formed through the edge walls of the slab at desired points, as indicated in Figure 3, to receive electrical conductors or wires, and ribs 4, 5, 6 and 7 shown in Figure 4 may have bores 8 extending therethrough and through the edge walls of the slab for the same purpose. A recess 9 may extend from the lower face of any rib and intersect its bore to permit the connection of electrical lighting or telephone fixtures with the conductors. A screw or similar fastening device 9^a may be imbedded in the slab in the top of the said recess so as to provide means for suspending a lighting fixture or other appliance. The slab is provided in its end and side edges with grooves 10 which extend entirely around the slabs, and notches or recesses 11 are formed through the edges and sides of the slab to communicate with these grooves and also with mating notches or recesses in adjoining slabs so that, when the slabs are assembled, grout may be poured through the said notches and fill the grooves to form a key binding the slabs together. The upper corner portions of the slabs are cut away, as shown at 12, and the side walls 13 of these cut-away portions are disposed somewhat obliquely so that they overhang the base portions thereof in order that, when grout is poured into the joint between adjacent slabs, the slabs will be effectually keyed together. In making the slabs, a metallic reinforcement 14, which may be wire netting of any desired mesh, is embedded in the upper por-

tion of the slab and reinforcing rods or wires 15 are also embedded in the slabs and project through the ends and sides thereof, the projecting portions of these reinforcements being doubled on themselves to present eyes or loops 16 bridging the grooves 10 in the ends and sides of the slab. Both ends of the said reinforcements are embedded in the slabs and the eyes 16 are of such size that, when slabs are brought together in any combination to produce a structural element, the eyes will project somewhat into the grooves of the adjacent slabs, and a connecting or tie bar 17 may be inserted through all the eyes, as shown in Figure 2. As shown in Figure 3, the transverse reinforcements may have their extremities wrapped around reinforcing rods 18 embedded in the side portions of the slab adjacent the bottom thereof and, after being bowed to form the eyes 19 bridging the grooves in the sides of the slab, may be extended entirely through the upper portion of the slab, as shown at 20. This form of reinforcement may be used in the same slab as the form shown in Figure 2 at 15 and 16, or either form of the reinforcements may be employed, as may be preferred. In Figure 2, I have shown the ends of two adjacent slabs resting upon a beam to form a floor, the beam being constructed of pre-cast concrete blocks 21 tied together by rods 22 inserted through the entire series of blocks and secured in any convenient manner as their ends. The block 21 is also provided with grooves 23 in its ends and a reinforcing and tying stirrup 24 is fitted in one of these grooves and about one of the tie rods 22 and extended up through the recesses or notches 11 of the slabs to be engaged around the tie bar 17, as clearly shown. An opening 25 is cut in the block 21 to permit the passage of the stirrup 24 and after these parts have been assembled, grout is poured through the opening provided by the cut-away portions 12 whence it will flow through the recesses 11 and the several grooves of the block 21 to bind all the parts together and embed the reinforcements with the result that a mono-

lithic mass is produced when the grout has set.

Having thus described the invention, what is claimed as new is:

1. A building element consisting of a slab having metallic reinforcements embedded therein, the slab being provided with one flat face and having its opposite face chambered, the slab being further provided with a groove extending around its end and side edges and having a recess formed in one of its edges transversely to and communicating with said groove, some of the reinforcements in the slab bridging the said groove.

2. A building element consisting of a slab having metallic reinforcements embedded therein and provided with a groove extending around its side and end edges, said side and end edges above said groove being cut away to form grout-receiving keyways, and a recess being formed in the slab to establish communication between said keyways and the said groove.

3. A building element consisting of a slab provided with one flat face and having a chamber in its opposite face surrounded by the edge walls of the slab, said slab having a rib extending into said chamber from one of said edge walls, said rib having a bore extending therethrough and through said edge wall and having a recess extending from the lower face of the rib and intersecting said bore for accommodating an electric fixture.

4. A building element consisting of a slab provided with one flat face and having a chamber in its opposite face surrounded by the edge walls of the slab, said slab having a rib extending into said chamber from one of said edge walls, said rib having a bore extending therethrough and through said edge wall and having a recess extending from the lower face of the rib and intersecting said bore for accommodating an electric fixture, said recess having means therein imbedded in the slab for securing an electric fixture in said recess.

In testimony whereof I affix my signature.

ALBERT HENDERSON. [L. s.]