W. H. FEIGENSON.

CONCRETE CONSTRUCTION.

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1,166,891.

Patented Jan. 4, 1916.

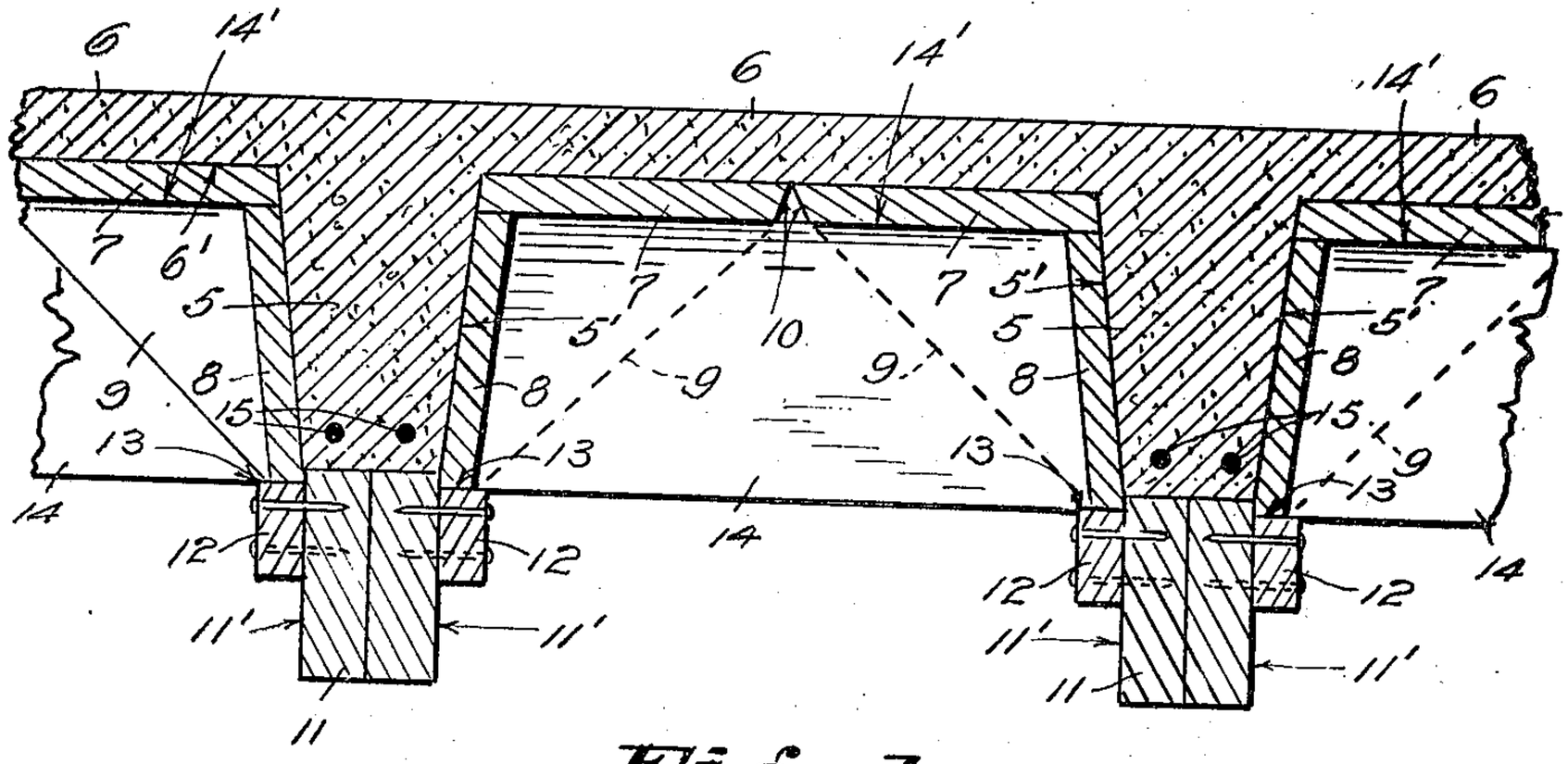

Fig. 1

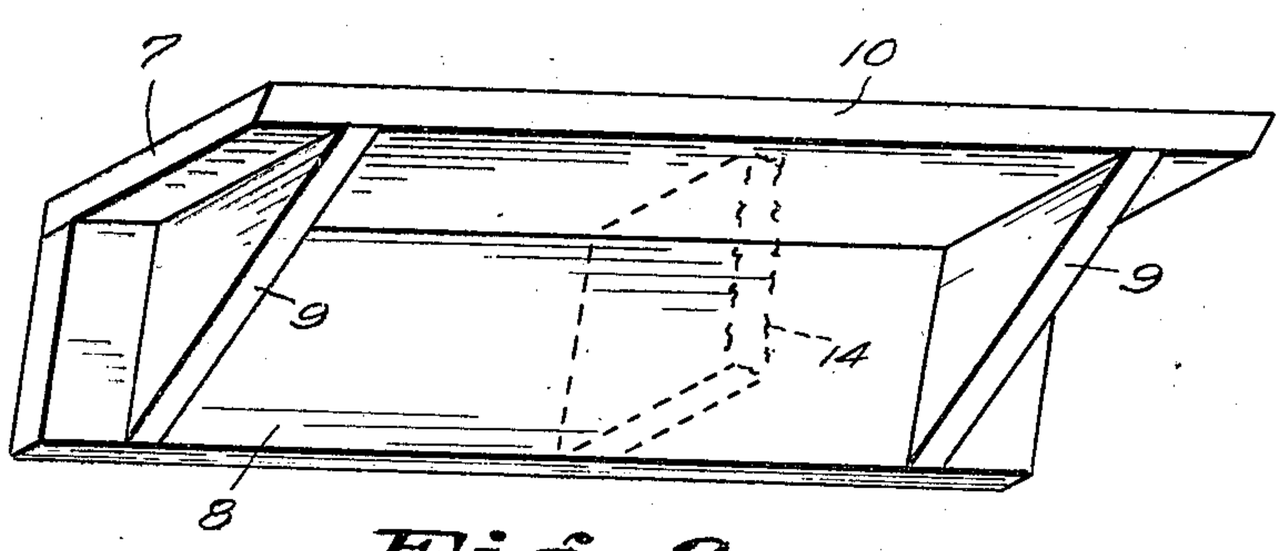

Fig. 2

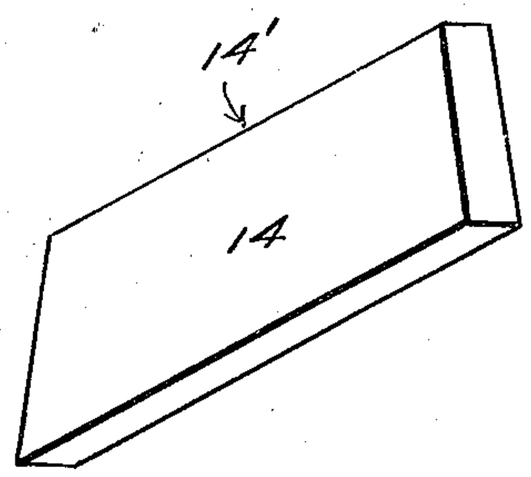

Fig. 3

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CONCRETE CONSTRUCTION.

1,166,891. Specification of Letters Patent. Patented Jan. 4, 1916.

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To all whom it may concern:

Be it known that I, WILLIAM H. FEIGENSON, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Concrete Construction, of which the following is a specification.

This invention relates to concrete floor and ceiling construction, and more particularly to the forms or framework upon which the concrete is laid and temporarily supported.

The object of the invention is the provision of building forms which may be repeatedly used and which may be quickly put into position or be removed after the concrete is set.

The invention consists in the novel construction and adaptation of devices, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a transverse vertical section of a portion of a floor with an embodiment of my invention applied thereto. Fig. 2 is a perspective view of one of the form members shown detached. Fig. 3 is a similar view of a removable form spreader and brace.

The reference numerals 5 designate beam elements and 6 slab elements of a type of concrete floor structure. This structure is illustrated as being made in molds or forms constructed according to the present invention.

In carrying out my invention I provide a plurality of frame-members such as shown in Fig. 2 which are adapted to be employed in couples as illustrated in Fig. 1. Each such frame member is comprised of a shelf-piece 7 which is rigidly secured at one longitudinal edge to an upright piece 8, and bracket pieces 9 which are secured to both the shelf and side-piece. The width of a shelf-piece 7 is desirably one-half the width of the distance or span between the upper ends of the floor-beam elements 5. The depth of an upright piece 8, together with the thickness of the associated shelf-piece 7, is slightly greater than the depth of a beam element 5.

The upright piece of a frame member is disposed in angular relations with the shelf-piece to correspond with the desired angle between the adjacent surfaces 5^1 and 6^1 of the beam and slab elements. In the illustrated example, the angle between such surfaces is somewhat greater than a right-angle to afford a slope or batter of the surfaces 5^1 to conform to the present preferred practice.

The outer edge 10 of a shelf-piece 7 is desirably beveled, as shown, to facilitate the withdrawal of a frame member after the concrete has become set. The above-described frame members are employed in pairs with the shelf-pieces thereof in alinement and the edges 10 opposed.

A temporary scaffolding which includes a longitudinal joist 11 is disposed in position to have the upper surfaces in a plane with the under surfaces of the floor beams. Each of these joists may be made of one or more pieces to provide a width equal to the width of a beam at the bottom. To the outer faces 11^1 of each joist and at a short distance below the upper surface of the same are secured ledge pieces 12 to afford shoulders 13 for supporting the upright pieces 8 of a frame member. The pieces 8 also abut against the sides of the joists and are thereby prevented from spreading.

The ledge-pieces 12 likewise serve to support the ends of a brace 14 which is fitted to have its ends contact with the upright pieces 8 of a pair of frame members and its upper edge 14^1 bear the shelf-pieces 6 to maintain them in horizontal positions.

The manner of using the invention may be explained as follows: The joists 11 with the attached ledges 12 are first placed in positions below where the beams 5 are to be located. The braces 14 and complementary frame members are then placed between the adjacent joists so that the upright pieces 8 and the ends of the braces will rest on the respective ledges 12. Being thus arranged, the portions of the joists which protrude above the ledges prevent the separation of the frame members and which are supported by the braces. In practice, a pair of frame members adjoin at their ends another pair, and so on, to a required length. After one row of frame members is properly placed, other rows are similarly disposed until the forms for a whole floor are installed, after which the reinforcing rods, as 15, are positioned and the concrete filled in between the upright pieces 8 and spread over the shelf-pieces 7 to a proper depth. When the concrete has set or become hardened, the ledges 12 are disconnected from the joists

11, and braces 14 are then knocked out from between the frame-members which are finally withdrawn by prying each of such members from the concrete by means of a bar introduced between an upright piece 8 thereof and the adjoining beam 5.

The frame members are not secured in place through the agency of nails or like fastenings but are held in their operative positions by the joist and ledge supports and by the braces. The frame-members and braces are thus not mutilated or injured in any way and may be repeatedly employed until the work is finished.

What I claim, is—

1. In apparatus of the class described, the combination with the supporting joists, and ledges provided at the sides thereof at a short distance below the upper surfaces of the respective joists, of a form comprising two rigid complementary frame members each having a side element and a shelf element, said shelf element being adapted to rest on said ledges and contact with the joists, and an integral brace for each pair of frame-members, said brace resting upon said ledges to removably maintain the frame-members in operative positions.

2. In apparatus of the class described, the combination with the supporting joists, and ledges provided at the sides thereof at a short distance below the upper surfaces of the respective joists, of a form comprising two rigid complementary frame members, each of said members being provided with a substantially upright side piece and a shelf-piece of approximately one-half the width of the space between two floor beams, bracket-pieces rigidly connecting the upright and shelf-pieces of each of said members, and an integral brace fitted to contact with the underside of the shelf pieces and with the inner faces of the upright pieces of both of said frame members, and being supported upon said ledges, serves for detachably supporting the frame-members in operative positions.

3. A form and support for a concrete floor in process of construction, comprising a pair of complementary frame-members each having a side and shelf-piece rigidly connected, and an integral brace to fit directly against the inner faces of the side pieces and the under faces of the shelf-pieces, and removable means for supporting said brace which in turn supports the frame-members in position to maintain the shelf pieces of both in a horizontal plane.

4. In apparatus of the class described, the combination of a two-part form, each part thereof being comprised of an approximately upright side piece and a horizontal shelf piece rigidly connected in angular relations, said shelves being formed at their sides remote from their connections with edges which meet at the top of the shelves and diverge downwardly, and a brace formed to fit into the space within the form and of a depth equal to the vertical distance between the underside of the shelf pieces and the lower edges of the side pieces, with removable means to support both the form and said brace and also serving to prevent the separation of the form parts with respect to the brace.

Signed at Seattle, Washington, this 24th day of December, 1914.

WILLIAM H. FEIGENSON.

Witnesses:
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E. PETERSON.