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COMBINATION PRECAST JOIST AND SLAB

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This invention relates to a combination joist and slab and it generally aims to provide a novel construction which may be pre-cast from concrete or the like at the factory and delivered in final form to the place of use.

One important object is to provide a structure having joists provided with extensions adapted for interlocking to form a continuous surface and to preferably employ in connection therewith, suitable cross-braces and interlocking means between the same and the joist.

More specific objects and advantages will become apparent from a consideration of the description following taken in connection with accompanying drawings illustrating an operative embodiment.

In the drawings:

Figure 1 is a view in cross section showing my invention in use in a building;

Figure 2 is a view taken at right angles to Figure 1, showing the invention applied by buildings;

Figures 3 and 4 are fragmentary views of adjacent units;

Figure 5 is a side elevation of one of the cross-braces;

Figure 6 is a prospective view showing a plurality of the units assembled;

Figure 7 is an end view of one of the units, and

Figure 8 is a cross section showing the units used in connection with a brick wall.

Referring specifically to the drawings wherein like reference characters designate like or similar parts, a suitable number of units 10 and 11 are preferably used. The end ones are preferably half-units 12 and 13 as shown in Figure 1. Such units and half units are preferably made of concrete and pre-cast, that is, manufactured in the factory and in final form delivered to the building or place of use.

Said units 10 and 11 comprise joists 14, and slabs for horizontal extension 15 integral therewith, the units thus being primarily T shaped in cross section.

The extensions 15, at their longitudinal side edges are adapted to interlock and to this end, certain of the slabs are provided with grooves 16, intermediate their upper and lower edges adapted to be entered by tongues 17 on the adjacent slabs, while the remaining side edges have overlapping flanges, ribs or projections 18 and 19, at top and bottom of adjacent slabs. The left-hand half of Figure 1, is the same as the structure of Figure 4, with the omission of the left-hand slab portion 15, while the right hand half section 12 in Figure 1 is the same as Figure 3 with the right hand slab portion omitted. Since all of the slabs are not interlocked by the tongues and grooves 17 and 16, but half the joists 10 and 19, the units may be more readily laid in place during the construction of a building.

Cross-braces are used between the joists, of the construction shown in Figure 5, the same preferably being made of concrete and pre-cast like units 10 and 11. Cast integrally with the joist 16, are enlargements 20, which have longitudinal ribs or beads 21, with which notches 22 in the ends of the cross braces are interfitted. Such cross braces also have longitudinally extending projections 23 which overlap and are supported on the enlargements 20. As shown in Figure 1, the longitudinal units or half units at the walls or partitions may overlap the same as at 24 in Figure 1, or they may have lateral projections 25, fastened or anchored in the wall. In Figure 1, the wall is shown as having a concrete foundation 26, upon which a wall 27, of any desired construction is built and with which the units are interfitted.

At the ends, the units, preferably have longitudinal lugs at 28, integral therewith, which are adapted to rest on and be interfitted in the wall as shown in Figure 2. In that figure, one of the walls, namely that at 29, is a partition wall.

It is clear that the joists units may be connected in the walls in any suitable manner, no matter what construction they are made of. Instead of the construction of wall shown in Figures 1 and 2, a brick construction may be used as at 30, in Figure 8.

The units may be used to provide a floor, roof or any structure desired. When a floor is provided, the units preferably have longitudinal grooves 31, therein having nailing strips 32 to which a wooden floor or the like may be nailed or fastened. Embedded in the units, are nails or anchors 34, which hold the nailing strips 32, in place. It is also to be understood that the units may be reinforced in any suitable manner as suggested as at 36 and 38 with suitable metallic elements. Likewise the cross braces may be reinforced by metallic elements as at 37.

Various changes may be resorted to provided they fall within the spirit and scope of the invention.

I claim as my invention:

1. A pre-cast wall structure comprising a plurality of units, said units consisting of joists, slabs integral with the joists, said slabs inter-
fitting at their longitudinal edges, said slabs having grooves, reinforcing elements extending across the slabs and relatively close to the grooves, nailing strips in said grooves, and means anchored in the material of the joist securing said nailing strips in place.

2. A wall structure comprising a plurality of units, said units consisting of joists, slabs integral with the joists, said slabs interfitting at their longitudinal edges, said joists having enlargements provided with ribs, in combination with cross-braces having portions overlapping and resting on the enlargements, and lugs integral with the ends of said joists to overlap portions of a wall.

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