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2,476,386

FLOOR UNIT

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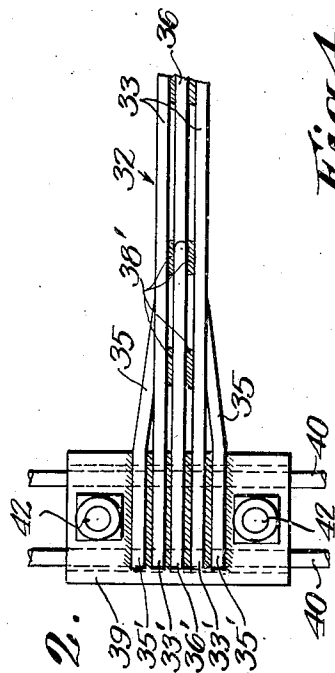


Fig. 2.

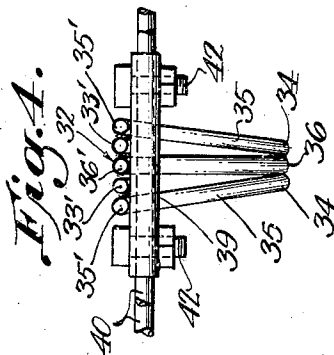


Fig. 4.

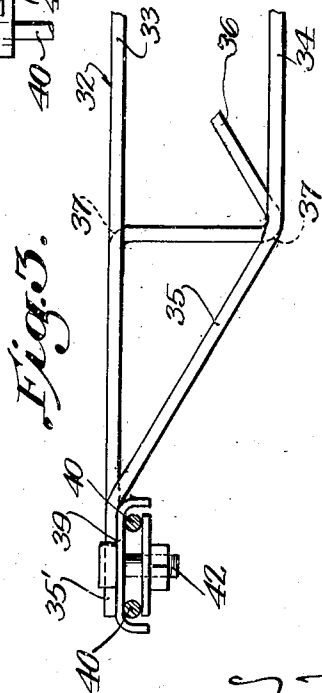


Fig. 5.

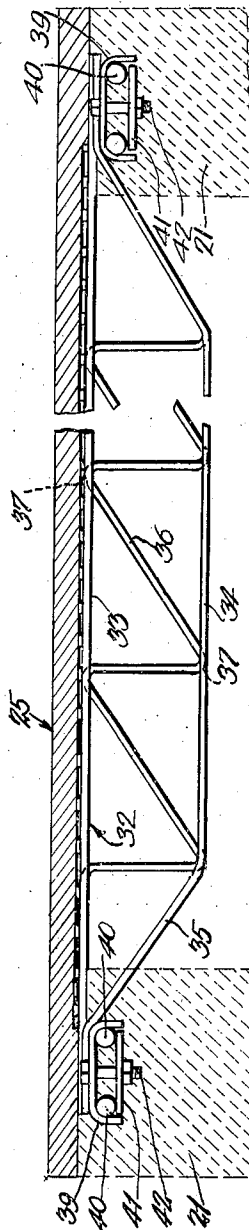


Fig. 1.

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UNITED STATES PATENT OFFICE

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FLOOR UNIT

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6 Claims. (Cl. 189—37)

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This invention relates to a prefabricated frame-like floor unit for use in the erection of the skeleton or frame work of a building.

The primary object of the invention is to provide a prefabricated frame-like floor unit which is longitudinally trussed and which is readily attachable to the foundation or substructure of a building.

Another object is to provide a prefabricated frame-like floor unit which is so made as to have an assured fit in connection to the foundation of a building, and which can be transported conveniently to the place where it is to be used.

Figure 1 is a fragmentary view, partly in section and partly in elevation, illustrating the installation of the floor unit of the present invention upon the foundation of a building;

Figure 2 is a fragmentary view, in top plan, illustrating a portion of a floor truss and a rest or saddle element for supporting and fitting the floor truss in a building structure assembly;

Figure 3 is a view, partially in side elevation and partially in cross section, of the parts shown in Figure 3;

Figure 4 is a fragmentary end view in correlation to the parts shown in Figures 2 and 3;

Referring to the drawings the floor truss structure 32, in itself, the same may be of any preferable form and arrangement and in either a single longitudinal body section or a plurality of sections placed side by side and secured together at intervals throughout substantially the entire length thereof. In the present invention, however, a particular means for joining the floor trusses 32 in the structural assembly of the building or attaching the same supportedly on the foundation portion 21, is shown, for example, in Figure 1, or they may be attached in any suitable manner in the building structure. As shown in Figure 1, in its particular mounting on the foundation portion 21 and in Figures 2 to 4, inclusive, as to certain structural details, the floor truss 32 comprises a plurality of parallel top horizontals 33, in the form of elongated rods or bars, and horizontal bottom chords 34 extending in parallel spaced relation to said upper bars or rods 33, and having their end portions 35 adjacent to where the truss is attached to the floor part 21, turned upwardly at an angle and carried alongside of the end portions of the top bars or rods 33 and terminating in substantially flush relation to the ends of said bars or rods 33 (see Figures 2 and 3). That is to say, the end portions 35 are located outside of the end portions of the rods or bars 33 and said end portions 35 are ac-

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cordingly flared outwardly from the main body portions of said lower horizontal rods or bars 34 which are directly vertical under the upper bars 33. In the floor truss structure, as shown more generally in Figure 1, each truss includes a web, preferably in the form of a zig-zag bar or rod 36 secured at intervals throughout its length to said upper bars 33 and lower bars 35, as at 37. In preferred detail, however, as shown more clearly in Figures 2 and 3, the filler or web bar 36 where it joins the upper bars and lower bars 34 is fitted and welded or otherwise firmly secured between said bars or rods 33 and bars or rods 34.

In the floor truss structure the cooperating parallel end portions 33', 35' and 36' of the bars or rods 33, 34 and 36 are welded together, as at 38, in close side by side relation on the top of a saddle element 39 (see Figs. 1 to 4, inclusive). Welding also occurs further inward, as at 33'.

The saddle element 39 welded or otherwise secured rigidly to the ends of the bars or rods of the truss element 32 is provided for the convenient attachment of the floor truss 32 to either the foundation 21 or to some "horizontal" or "lateral" in the building frame structure to be presently described more fully in detail.

It is here further noted that, in some cases, the saddle element 39 may be attached to or be formed integrally as a part of and with only the end portions of the top chord or rod members of the floor truss 32, instead of being attached to all of the rods or bars of the truss including both the top and bottom chords. As to the saddle element 39, it is here also noted that the same may be embedded, in use, in the foundation part 21 or some other base or foundation part of the building structure, as indicated in Figure 1, in which case, a plurality of the said saddle elements 39 may be spaced a definite distance apart from each other and each element 39 made to straddle a pair of laterally spaced longitudinal bars or rods 40, to which bars or rods each saddle element 39 is clamped by a transverse bar or plate 41 which is fastened to the middle portion of the saddle member 39 by a bolt 42 or the like. All of these parts, including the longitudinal bars or rods 40 together with the saddle members 39 and clamping plates 41, are preferably embedded in the foundation part 21 or other similar part whether the same be constructed in a built-up manner from bricks and pieces of stone or moulded into a solid integral mass from concrete.

Having thus described the invention, what is claimed is:

1. In a building structure of the character described, an open framelike longitudinally trussed and prefabricated floor unit, said unit comprising a longitudinal pair of horizontal upper chord bars spaced a limited distance laterally apart, a pair of lower chord bars spaced approximately the same limited distance apart in parallel relation to each other but at a greater distance directly below said upper chord bars and in parallel relation thereto throughout substantially the major portion of the length thereof, a medial longitudinal truss bar extending in up-and-down zig-zag directions between said pair of upper chord bars and said pair of lower chord bars and being securely attached alternately to said upper chord bars and to said lower chord bars at the adjacent corners of the angular turns of said truss bar, whereby to produce a light weight yet rigid and stable supporting structure for the part of the building carried thereon, the end portions of said pair of upper chord bars being extended a substantial distance beyond where the zig-zag formation of said truss bar terminates, and the end portions of said truss bar beyond the termination of its zig-zag formation extending longitudinally between the end portions of said pair of upper chord bars and being securely attached to each other throughout substantially the entire extent of these end portions, the pair of lower chord bars being each turned upwardly at an angle from the place where the zig-zag formation of said truss bar terminates to a point some distance inwardly from the ends of said upper chord bars and said truss bar and thence laterally outward parallel with said just mentioned bar end portions in the same horizontal plane therewith and being rigidly secured to the outside of the adjacent end portions of the respective bars of the upper chord, and a transverse saddle member secured to the under side of said laterally attached end portions of the respective upper and lower chord bars and said truss bar.

2. In a building construction, the combination and arrangement of parts as set forth in claim 1 and further describing more specifically that the said saddle element extends a substantial distance at each end beyond the adjacent sides of said trussed floor unit.

3. In a building structure of the character described, the combination and arrangement of parts as set forth in claim 1 and further describing more specifically that the said saddle element comprises an elongated member of inverted channel shape and extending a substantial distance on opposite sides of said trussed floor unit, and means for clamping to said saddle element a supporting and attaching horizontal building frame element interposed therebetween.

4. A prefabricated horizontal supporting span unit for a building structure of the character described, the same comprising a pair of parallel laterally spaced-apart longitudinal upper chord members, with a correspondingly spaced-apart pair of lower chord members spaced a substantial distance below said upper chord members and an interposed angularly and tortuously bent elongated strut member rigidly secured at interval corner portions to both of said upper and lower chord members, the ends of said chord members and said strut member being brought close to each other and secured rigidly together in side-by-side

relation, and a transverse saddle element secured rigidly to the under side of said interattached chord and strut members at each end of the section or unit, said saddle element being arranged and adapted for supporting attachment directly to the building structure.

5. A prefabricated all-metal horizontal supporting span unit, substantially as set forth in claim 4, wherein the saddle element comprises a member of inverted substantially U-shaped form and of a length to extend a substantial distance on opposite sides of the unit, and in addition includes means embodying a clamping plate underlying said inverted U-shaped member and spaced from the latter, and adjustable securing means cooperating with both the said member and said plate, whereby said saddle element may be attached to the building structure.

6. In a building structure, a prefabricated frame-like longitudinally-trussed floor unit, said unit comprising a longitudinal pair of horizontal upper-chord bars spaced a limited distance laterally apart, a pair of lower-chord bars spaced approximately the same limited distance apart in parallel relation to each other arranged directly below said upper-chord bars and in parallel relation to the latter bars, a medial longitudinal truss bar extending in up-and-down zig-zag directions between said pair of upper-chord bars and said pair of lower-chord bars and attached alternately to said upper-chord bars and to said lower-chord bars, the end portions of said unit being extended a substantial distance beyond where the zig-zag formation of said truss bar terminates, and a transverse saddle element secured to the under-side of each of said end sections, said saddle element comprising an inverted channel member, a movable plate arranged in cooperative relation to the open side of said channel member and in normally spaced relation thereto, said channel member and said plate being apertured in actual alignment, and at least one fastening bolt fitted slidably in the apertures of said channel member and said plate, said bolt having adjustable tightening means thereon to effectively clamp and hold securely a transverse supporting frame element interposed between said channel member and said plate.

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