R. W. STENTZEL.

CONCRETE CONSTRUCTION.

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1,079,152.

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Fig. 3.

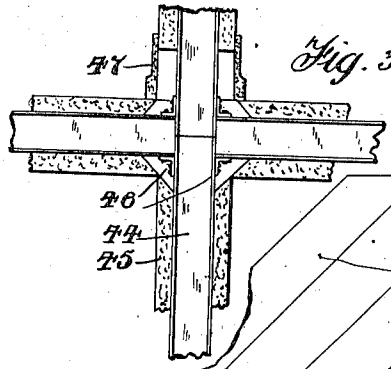

Fig. 1.

Fig. 2.

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CONCRETE CONSTRUCTION.

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Application filed June 12, 1912. Serial No. 703,302.

To all whom it may concern:

Be it known that I, ROBERT WALDEMAR STENTZEL, a subject of the Czar of Russia, and a resident of 20 Sussex street, in the city and district of Montreal, Province of Quebec, Dominion of Canada, have invented certain new and useful Improvements in Concrete Construction; and I do hereby declare that the following is a full, clear, and exact description of the same.

The invention relates to improvements in concrete building construction, as described in the present specification and illustrated in the accompanying drawings that form part of the same.

The invention consists essentially of the novel means for building houses and other edifices in wall floor and roof sections.

The objects of the invention are to cheapen and quicken the construction of buildings in concrete, to devise efficient means of putting up buildings in sections from materials already prepared in the factory and generally to provide a comparatively cheap, handsome and durable building.

In the drawings Figure 1 is a sectional perspective view of a house constructed in the manner of this invention. Fig. 2 is a perspective detail of a section showing another section broken away and a portion of the flooring. Fig. 3 is a sectional detail showing the manner of applying this invention to steel structures.

Like numerals of reference indicate corresponding parts in each figure.

Referring to the drawings, 1 are concrete beds having dove tail grooves 2 in the upper surfaces thereof and here shown as sunk in the ground.

3 are the inner and outer upright sections forming the foundation walls and having the dove tail grooves 4 in the lower face thereof, meeting the dove tail grooves 2, the dove tail grooves 5 in the upper surface thereof and the pouring holes 6 leading from the beds of the dove tails 5 to the dove tails 4 and forming passages for a liquid cement binder, which on being poured through spreads along and fills up the dove tail grooves 2 and 4 and affords a very strong joint between the foundation walls and the concrete beds, said foundation walls being molded in concrete, preferably at the factory, and set up on the concrete bed in their finished state.

7 are floor sections superimposed on the foundation walls 3 and having the longitudinal dove tail grooves 8 in their under surfaces, toward the outer edge thereof and registering with the dove tail grooves 5, the dove tail grooves 9, in their upper surfaces in vertical alinement with the dove tail grooves 8 and pouring holes 10 extending from the beds of the grooves 9 to the grooves 8 and forming passages for the liquid cement binder. The outer edge faces of the floor sections 7 are shown as flush with the outer side surfaces of the foundation walls 3 though this may be varied in different constructions.

11 are wall sections in similar arrangement to the foundation walls 3, that is to say, there are inner and outer walls having a lower dove tail groove 12 registering with the dove tail grooves 9 and the upper dove tail grooves 13, as well as the pouring holes 14 extending from the dove tail 13 to the dove tail 12 and forming the passages for the liquid cement binder.

15 are dove tail grooves longitudinally arranged in the inner edge faces of the outer floor sections 7.

16 are the floor sections having in each longitudinal edge face the dove tail groove 17, the latter in the adjoining section or slab registering with the dove tail 15, said sections or slabs having pouring passages 18 for the liquid cement binder, the sections or slabs of concrete 7 and 16 extending longitudinally from foundation walls to foundation walls and laterally when bound together by the liquid cement binder in the dove tails 15 and 17 from foundation walls to foundation walls, said slabs 7 and 16 toward the ends having the dove tails 19 and 20 extending thereacross in the upper and under surfaces respectively and registering with the dove tails 2 in the said foundation walls and the dove tails 12 in the said wall sections and the pouring holes 21 extending from the dove tail 20 to the dove tail 19, through which the liquid cement binder is poured.

There is now the complete foundation, the entrance floor and walls for the first story.

23 is a partition also of concrete, the same as all the parts hereinbefore described, said partition being in a plurality of slabs or sections having dove tail grooves 24 on the top edge faces.

25 are floor sections or slabs of concrete having dove tail grooves 26 along the lon-

gitudinal edge faces (except in the outer ones of said flooring in which the outer faces are perfectly plain), the laterally arranged dove tail grooves 27 across the middles registering with the dove tail grooves 24 of the partition and dove tail grooves 28 and 29 at the ends thereof in the upper and under faces the under grooves registering with the grooves of the walls sections 11, said floor sections 25 having the pouring holes 30 in the middle thereof and pouring holes 31 for the ends of the walls besides pouring passages therebetween.

32 are the upper wall sections with corresponding dove tail grooves and pouring passages in fact quite similar to the wall, sections 11 and superimposed on the outer sides of the floor sections 25 and held by the liquid cement binder in the same way.

33 are the top floor sections supported on the wall sections 32 and having dove tail grooves and pouring passages very much the same as the other floor sections.

34 are the roof sections or slabs of concrete rising to a peak and having in the upper edge faces the dove tail grooves 35 and 36 and the pouring passage 37 to put the liquid cement binder into the grooves 35 and 36 and bind the sections of the roof at the top end.

38 are the rests formed adjacent to the lower end of the roof sections 34, having horizontal faces supported at the ends of the top floor 33 and having dove tail grooves 39 meeting the corresponding dove tail grooves in said top floor, said meeting grooves receiving the liquid cement binder through the pouring holes 40.

41 are the top wall pieces at each end of the roof joined to the other parts in precisely the same manner, by the liquid cement binder.

The door openings and the window openings are made in pieces according to the design of the house, everything being molded in concrete previous to the building of the house, so that all that is necessary will be done at the general molding factory ready to be placed in position by derricks according to the plans and specifications. The exposed surfaces of the slabs of concrete are preferably finished off with a fine grade of cement which will take a polish, thereby doing away with the necessity of finishing as any coloring matter can be put into the finishing surface cement. Furthermore the finishing off of the concrete slabs in smooth surfaces at the outside will make it waterproof, so as to withstand inclemencies of the weather.

The flooring surfaces may be finished off in any suitable style, as there are several very good floors already on the market but for those preferring the wooden floor I submerge scantlings 42 in the concrets slabs forming the flooring members and to these scantlings nail the flooring boards 43.

In Fig. 3 I show this invention as applied to steel structures, in which steel beams 44 have the concrete beams 45 molded around them, the concrete terminating in all of said beams adjacent to the ends thereof, the termination of the concrete at the bottom of the vertical beams being straight cut across while in all the other beams and the other ends of the vertical beams the termination of the concrete is in an oblique inward cut, so that in every corner but one, the concrete of the beams meet when the angles 46 are riveted to the steel beams. It is very easy to see how the riveting is done before the horizontal beams are in, but after they are in there is still more riveting to do and this is done from the top opening, which is considerably larger than any other opening. The top opening is closed by the base 47 after the liquid cement binder has been poured in and fills up the space around the joints of the steel beams. The remainder of the concrete slabs of the steel structure are preferably as has been described herein, only sufficient variations being made to bring the different dove tail grooves into register.

What I claim is:—

In concrete building construction, a foundation of concrete embedded in the earth and having longitudinal joint channels, preformed under walls of concrete in sections standing on said foundation and having corresponding joint channels, joint channels on the top thereof and pouring ducts to the lower foundation channels through the walls, a flooring of concrete in sections supported on said under walls and having longitudinal joint channels in the top and bottom of the marginal portions thereof and pouring ducts therethrough and longitudinal joint channels between the several sections, upper walls of concrete in several sections standing on said flooring and having in the top and bottom sides thereof joint channels and longitudinal pouring ducts therethrough, and between each section, longitudinal joint channels, a roof of concrete in several sections resting on the upper walls and having joint channels across said sections toward the outer ends thereof and pouring ducts leading to said joint channels, and a cement binding in all of said channels.

Signed at the city of Montreal, Province of Quebec, Canada, this 30th day of April, 1912.

ROBERT WALDEMAR STENTZEL.

Witnesses:
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M. PATENAUDE.