

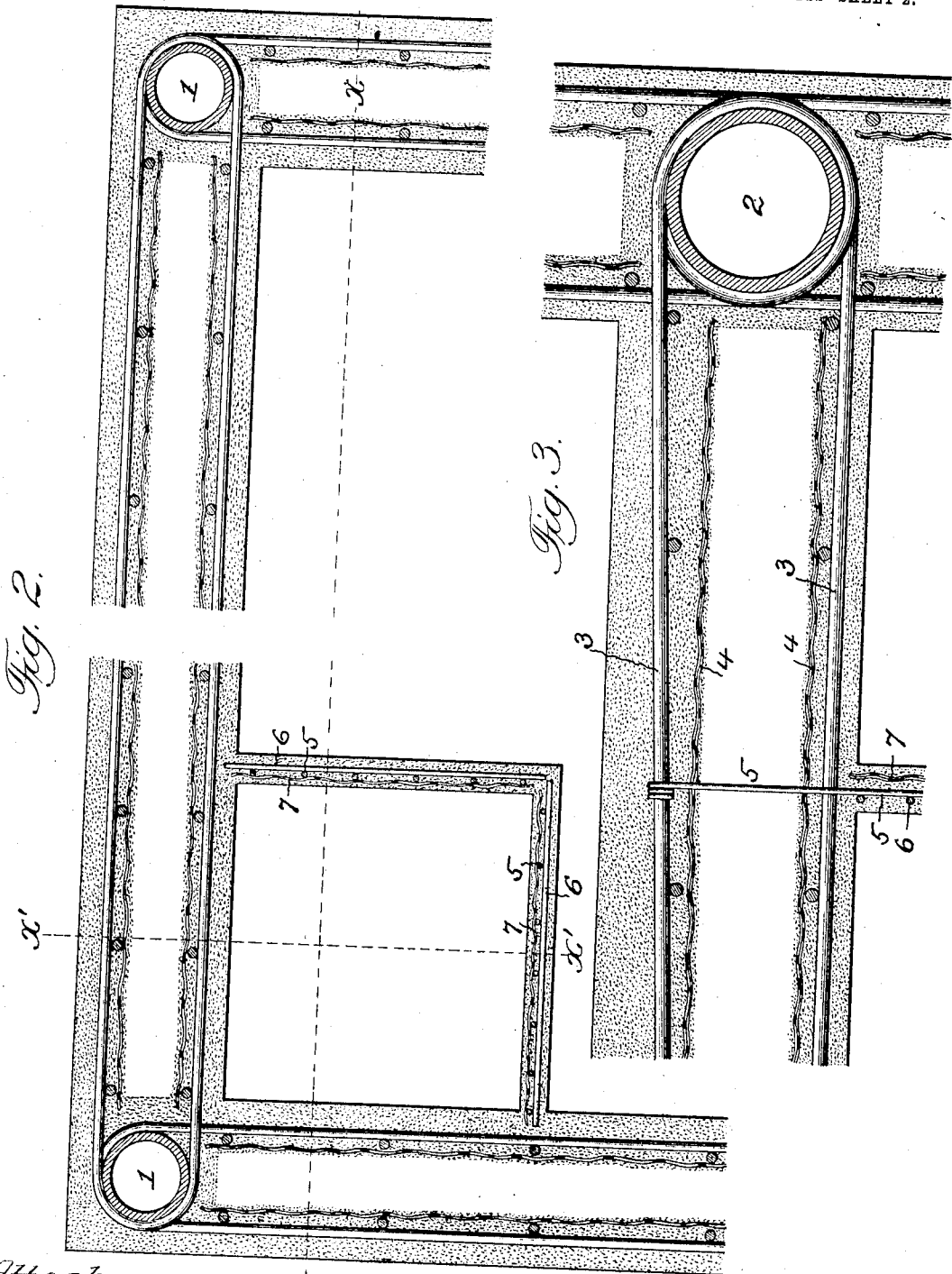
No. 875,804.

G. M. GRAHAM.
REINFORCED CONCRETE BUILDING.

APPLICATION FILED AUG. 22, 1907.

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2 SHEETS—SHEET 2.



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REINFORCED CONCRETE BUILDING.

No. 875,804.

Specification of Letters Patent.

Patented Jan. 7, 1908.

Application filed August 22, 1907. Serial No. 389,653.

To all whom it may concern:

Be it known that I, GEORGE M. GRAHAM, a citizen of the United States of America, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Reinforced Concrete Buildings, of which the following is a specification.

This invention relates to that type of reinforced concrete structures in which the reinforcing members consist of a series of wire strands under initial uniform tension, an example of which is set forth in my prior Letters Patent No. 865,490, of September 10, 1907. And the present improvement has for its object to provide a simple and efficient system and means for forming vertical walls or partitions in such type of concrete structures, and which is adapted to afford a ready and effective means for straining the wires forming the reinforcing portion of the wall or partition, and so that such wires will provide the necessary strength and rigidity to a minimum thickness of the concrete forming the main body of such wall or partition, all as will hereinafter more fully appear.

In the accompanying drawings:—Figure 1, is a vertical section, on line $x-x$ Fig. 2, of a portion of a building structure illustrating the system of construction involved in the present invention. Fig. 2, is a horizontal section of the same. Fig. 3, is an enlarged detail vertical section on line $x'-x'$ Fig. 2.

Similar numerals of reference indicate like parts in the different views.

Referring to the drawings, 1 represents a series of posts or columns supported on the usual foundation walls or piers, and of any usual and suitable cross section, preferably the tubular form shown in Fig. 2.

2 are a series of horizontal tubular girders or beams arranged in right angle relation, with their meeting ends secured together and to adjacent posts 1 by suitable fittings. Four of such girders secured together, with the accessories hereinafter described, constitute a single unit of the skeleton reinforce frame of a building structure; additional units utilizing in their formation the adjacent girder or girders of such first mentioned unit, as fully set forth, in my aforesaid prior Letters Patent No. 865,490. 3 is a

skeleton wire centering or webbing, formed by continuous wrappings of a single wire around said marginal frame in spaced relation and preferably in crossed or opposite directions to provide an open web like center for the frame, and to which is attached any usual and suitable form of sheet lathing 4 to receive the mass of concrete from which the main body of the floor or other portion of the structure is formed.

The uppermost web of the aforesaid centering 3, as fully set forth in my aforesaid application will have a dished form, the curve of which approximates a catenary, and around which the mass of concrete is applied with its upper surface horizontal as illustrated in Figs. 1 and 3. In such construction the perforated lathing 4 will have a horizontal position in the finished floor and to such end will have an initially dished form, and secured in such dished form to the wire web or center 3, so that with the dishing of said wire web, the lathing will be brought to the above mentioned horizontal or flat condition.

The novel and material part of the present system comprises in connection with a reinforced concrete structure substantially as above described, a partition structure formed as follows:—5, are a series of vertical reinforcing wires attached at their upper ends to the uppermost web of the wire centering 3 before described. Such series of wires hang in a loose or pendent condition until the dish has been imparted to the aforesaid uppermost web, and the concrete applied, to complete the floor of which the said web forms a component part. The lower ends of such series of vertical wires 5 are then attached to the uppermost web of the wire centering of the next floor beneath, while the said web is in an undished condition, and previous to the dishing thereof and the application of the mass of concrete to form such second floor. In the construction above described, with the dishing of the last mentioned web and with the application of the concrete mass, a tension stress is imposed on the series of vertical reinforcing wires 5, so that they will afford the required stability to the finished partition and permit of the formation of a very thin partition possessing the requisite strength.

At the same time that the lower ends of the aforesaid series of wires 5 are attached to the uppermost wire web of such second floor, the upper ends of a second series of vertical reinforcing wires 5' are attached in adjacent relation to the aforesaid lower ends of the first series of wires 5, to constitute a portion of a second partition in case the same is desired between said second floor and a third floor beneath, and so on through the various stories of the structure.

The present improved system contemplates the application of the cement mass to the floors and other portions from the top of the building in a downward direction, which has been found to be a desirable manner of erection both from an economical and a commercial standpoint.

6 are a series of transverse wires secured to the vertical series of reinforcing wires 5 in any usual and suitable manner, and adapted to impart additional stiffness to such wires.

7 are sheets of perforated lathing secured to the aforesaid series of reinforcing wires 5 to receive the mass of concrete or the like and form the completed partition.

Having thus fully described my said invention what I claim as new and desire to secure by Letters Patent, is:—

1. The herein described method of forming partitions in reinforced concrete structures, which consists in initially securing the vertical reinforcing partition wires at their upper ends to the wire reinforce of an upper concrete floor, attaching the lower ends of said vertical partition wires to the wire reinforce of a floor beneath, imparting dished form to such floor reinforce by an application of the floor concrete to impose a tension stress upon the vertical partition wires so as to take up the slack thereof, and applying the partition concrete to said vertical partition wires, substantially as set forth.

2. The herein described method of forming partitions in reinforced concrete structures, which consists in initially securing the vertical reinforcing partition wires at their upper ends to the wire reinforce of an upper concrete floor, imparting a dished form to such floor wire reinforce by an application of the floor concrete, attaching the lower ends of said vertical partition wires to the wire reinforce of a floor beneath, imparting a dished form to such floor reinforce by an application of the floor concrete to impose a tension stress upon the vertical partition wires so as to take up the slack thereof, and applying the partition concrete to said vertical partition wires, substantially as set forth.

3. In a reinforced concrete structure the combination of a series of horizontal marginal frames, skeleton wire centerings attached thereto and having a dished form, vertical reinforcing wires attached at their respective

ends to said skeleton centerings, and a plastic mass applied to said vertical wires to constitute a partition, substantially as set forth.

4. In a reinforced concrete structure, the combination of a series of horizontal marginal frames formed of round tubing, skeleton wire centerings having webs formed by strands of wire wound around the circular periphery of the frame tubing, the uppermost webs of said centerings having a dished form, vertical reinforcing wires attached at their respective ends to said skeleton centerings, and a plastic mass applied to said vertical wires to constitute a partition, substantially as set forth.

5. In a reinforced concrete structure, the combination of a series of horizontal marginal frames formed of round tubing, skeleton wire centerings having webs formed by strands of wire wound around the circular periphery of the frame tubing, the uppermost webs of said centerings having a dished form, vertical reinforcing wires attached at their respective ends to the dished webs aforesaid, and a plastic mass applied to said vertical wires to constitute a partition, substantially as set forth.

6. In a reinforced concrete structure, the combination of a series of horizontal marginal frames, skeleton wire centerings attached thereto and having a dished form, vertical reinforcing wires attached at their respective ends to said skeleton centerings, transverse connecting wires attached to said vertical wires, and a plastic mass applied to said vertical wires to constitute a partition, substantially as set forth.

7. In a reinforced concrete structure, the combination of a series of horizontal marginal frames formed of round tubing, skeleton wire centerings having webs formed by strands of wire wound around the circular periphery of the frame tubing, the uppermost webs of said centerings having a dished form, vertical reinforcing wires attached at their respective ends to said skeleton centerings, transverse connecting wires attached to said vertical wires, and a plastic mass applied to said vertical and transverse wires to constitute a partition, substantially as set forth.

8. In a reinforced concrete structure, the combination of a series of horizontal marginal frames, skeleton wire centerings attached thereto and having a dished form, vertical reinforcing wires attached at their respective ends to said skeleton centerings, transverse connecting wires attached to said vertical wires, perforated lathing attached to said partition wires, and a plastic mass applied to said wires and lathing to constitute a partition, substantially as set forth.

9. In a reinforced concrete structure, the combination of a series of horizontal marginal frames formed of round tubing, skeleton

wire centerings having webs formed by strands of wire wound around the circular periphery of the frame tubing, the uppermost webs of said centerings having a dished form, vertical reinforcing wires attached at their respective ends to said skeleton centerings, transverse connecting wires attached to said vertical wires, perforated lathing attached to said partition wires, and a plastic

mass applied to said wires and lathing to constitute a partition, substantially as set forth.

Signed at Chicago, Illinois, this 12th day of August 1907.

GEORGE M. GRAHAM.

Witnesses:

ROBERT BURNS,
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