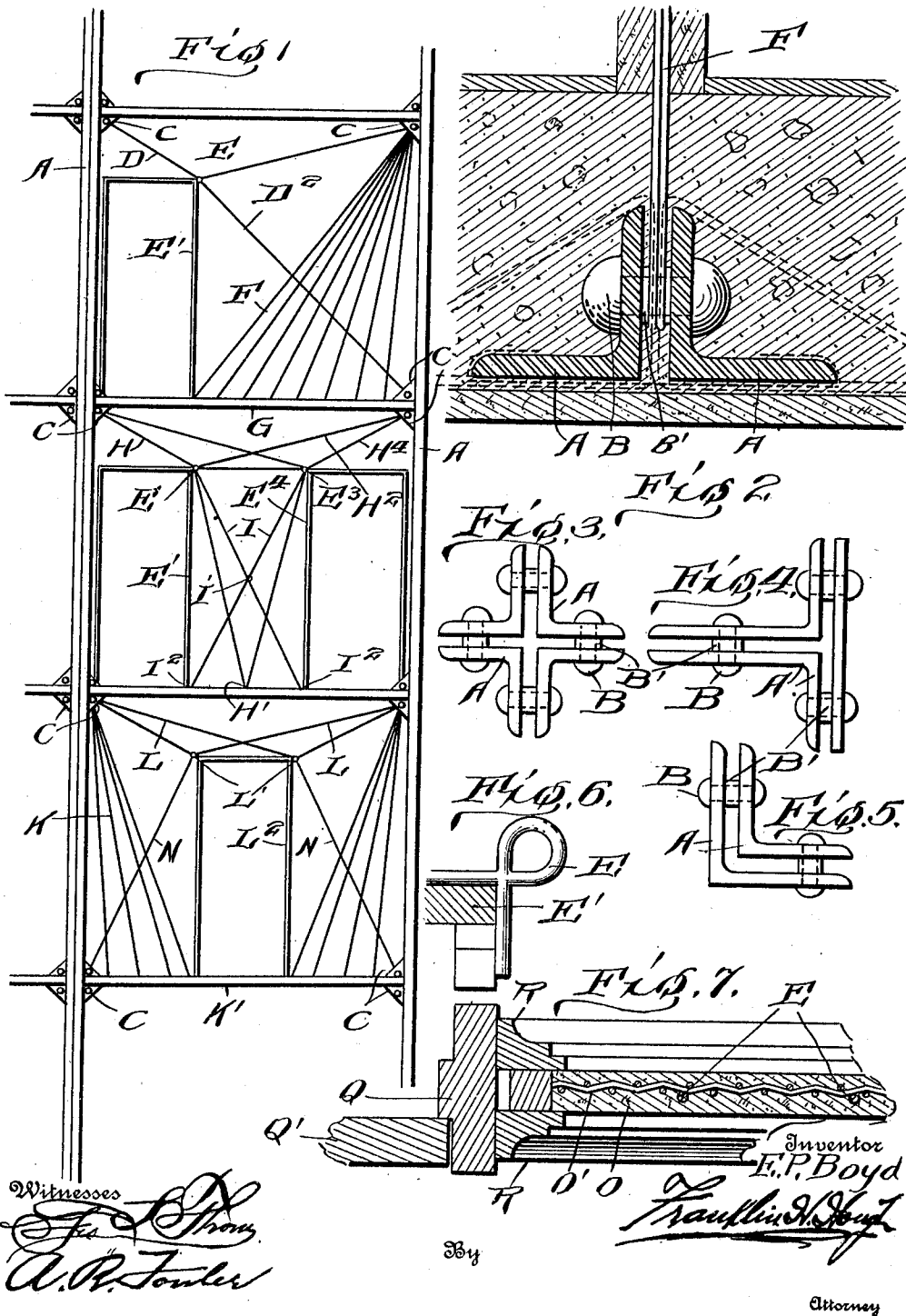


E. P. BOYD.
SYSTEM OF CONSTRUCTING BUILDINGS.
APPLICATION FILED JUNE 28, 1910.

991,942.

Patented May 9, 1911.



UNITED STATES PATENT OFFICE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDWARD P. BOYD, a citizen of the United States, residing at Oklahoma city, in the county of Oklahoma and State of Oklahoma, have invented certain new and useful Improvements in Systems of Constructing Buildings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in construction of buildings in which tension members are utilized in their dual capacity as studs and means for supporting floor loads, thereby making it possible to use exceedingly light beams in floor, by the employment of the tension members for transferring directly the loads to the piers through which all loads must be supported from the foundation.

The invention comprises further a novel mechanical construction of this nature for buildings in which various materials may be used in the system of construction.

The invention consists further in a method of framing a building for use with thin construction of walls in which, instead of the use of beams and girders, as now commonly employed, for carrying the loads between the piers, it is my purpose to utilize the small angles, fabricated back to back with slight spaces intermediate the same of sufficient thickness to span the openings in the partition above and to form a shelf upon which the floor system may rest. In this construction, the floor loads will be transmitted directly to the piers by means of wires of the required strength which may be rigidly placed by doubling around separators between angles in the floor and through holes in the gusset plates.

My invention comprises various details of construction and combinations and arrangements of parts which will be hereinafter fully described and then specifically defined in the appended claims.

I illustrate my invention in the accompanying drawings, in which:—

Figure 1 is an elevation showing the metallic frame of the building with the suspended braces connected thereto in different

manners on different floors. Fig. 2 is an enlarged sectional view through floor supporting angled beams embedded in a suitable filling and showing the manner of attachment of tension wires. Fig. 3 is a detail view of angled inside piers fastened together with rivets and spaced apart for the reception of the suspension rods or wires. Fig. 4 is a detail view of exterior piers. Fig. 5 is a detail view of corner piers spaced apart and held by rivets. Fig. 6 is a detail view of a welded ring staple fastened to grounds of the framework for a door and Fig. 7 is a detail sectional view through a reinforced partition, jamb and moldings.

Reference now being had to the details of the drawings by letter, A designates the angle beams or piers of a building which are held in fixed relation by means of the rivets B upon which are washers B' holding the piers or beams spaced apart, as shown clearly in Figs. 3 to 5 of the drawings. At the points at which the vertical and horizontal beams are connected are the reinforcing plates C which are apertured for the reception of the tension rods or wires which, as will be noted in Fig. 1 of the drawings, are connected in different ways, for instance in the upper portion of Fig. 1 the tension or suspension rod D is fastened in an aperture in one of the reinforcing plates C and is thence connected to a welded ring or staple E upon the door frame E' at the upper corner thereof. A second tension rod, designated by letter D², is fastened to the welded ring E and its other end fastened to the reinforcing plate C at the lower corner of the story. Similar tension rods, designated by letter F, are fastened at their upper ends to a reinforcing plate C and are radially disposed with their lower ends fastened to the floor beam G spaced apart at intervals from the door frame E' to the upright beam which is incorporated in the side wall of a room.

In the second story of the frame, shown in Fig. 1 of the drawings, the tension rod H is fastened at its upper end in the usual manner to the reinforcing plate C and thence connected to a welded ring E upon the frame E' and said rod H is thence fastened at H' to the floor supporting beam. A tension rod H² is fastened to a reinforcing plate C, thence connected to the welded ring E, and H³ designates an additional tension rod fastened to a reinforcing plate

C and thence connected to a ring E^3 fastened to one corner of the door frame E^4 . Another tension rod H^4 is fastened to one corner and its lower end is secured to the ring E^3 . Tension rods I are fastened at their upper ends respectively to the rings E and E^3 and intersect at their longitudinal centers and are engaged by a ring I' and their lower ends are fastened to the floor beam at locations designated respectively by letters I^2 .

At the lower portion of Fig. 1 of the drawings in the construction representing the first floor in which the tension members are employed, a series of rods K are shown as fastened to each upper corner of the story and radially disposed with their lower ends fastened to the beam K' , while two tension rods L are fastened at their upper ends, one to each corner, and intersecting each other are secured to the rings L' at the upper corners of the door frame L^2 , and tension rods N are fastened at their upper ends, one to each ring L and their lower ends one to each corner reinforcing plate C , as shown. The lower ends of each of the several tension rods are fastened to the washers B intermediate the sets of piers or angled beams, which washers space said piers or beams apart slight distances of sufficient width to receive the rods, thus affording secure anchorage therefor.

In Fig. 7 of the drawings, I have shown a sectional view of a partition O of plaster in which is embedded metallic lath or wires O' .

From the foregoing, it will be noted that, by the provision of the construction shown, in which tension wires or rods are utilized in the capacity of studs and means for taking floor loads from light beams of the floor, a novel form of framing is produced, making

it possible for the utilization of thin construction walls. Instead of using beams and girders of sufficient thickness to carry the floor loads between the piers, it is my purpose to utilize the small angles with the fabrication work of tension rods as shown and which will have only sufficient thickness to span the openings in the partitions above, the angle beams forming shelves upon which the floor system may rest. By such a construction, the floor loads will be transmitted directly to the piers by means of the tension wires of required strength.

In the construction embodying the features of my invention, comparatively light wires may be utilized where they are not intended to carry floor loads and which might be utilized in residence work. Usually the welded rings may be utilized to change the direction of strains at corners of grounds forming rough openings, the detailed form shown in the drawings forming a convenient means for plumbing the same.

What I claim to be new is:—

A tension supporting mechanism for buildings comprising, in combination with the metallic frame of the building, having a metallic door frame, an eye upon a corner of said door frame, floor supporting angle beams fastening means securing said beams in place and spaced apart, tension members fastened to the frame of the building extending between the frame and angle beams and engaging said eyes and secured to the fastening means intermediate the angle beams.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

EDWARD P. BOYD.

Witnesses:

E. F. HOWARD,
M. H. WEEDMAN.