Jan. 15, 1935. G. FIORINI 1,988,075

BUILDING CONSTRUCTION

Filed Nov. 25, 1932

Fig. 1

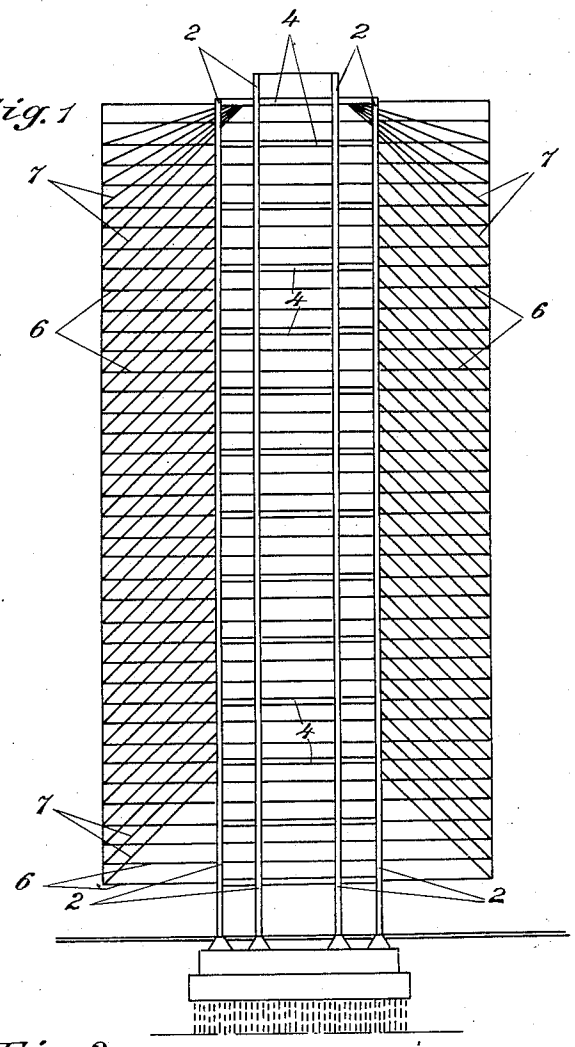
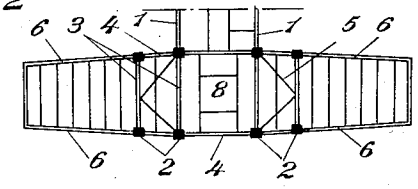


Fig. 2



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BUILDING CONSTRUCTION

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3 Claims. (Cl. 189—1)

This invention relates to improvements in building construction of the type employed in the erection of lofty structures, ordinarily termed "skyscrapers". It has for its object the provision of a metallic unit including a central tower and floor girders projecting from opposite sides of the tower, the girders being hinged at their inner ends to the tower and suspended at their outer ends by tension members attached to upper parts of the tower. The tower carries the whole load of the unit and the girders provide the floor space. The tower is of restricted horizontal cross-area so that the foundation supporting the tower can be confined within narrow limits in comparison with the superficial area occupied by the structure as a whole. The hinge and suspension mounting for the girders permits a quick coordination of the floor members and they are stayed against the stresses and strains incident to lofty building structures.

The invention consists in the novel construction, combination and arrangement of parts, hereinafter described in detail, pointed out in the appended claims, and illustrated by the accompanying drawing.

In the accompanying drawing, in which similar reference characters designate corresponding parts:

Figure 1 is a side elevation of a structural unit embodying the invention; and

Fig. 2 is a plan view of the same.

Referring to the drawing in detail, the central tower comprises a plurality of uprights 2 anchored at their lower ends in the usual masonry or cement foundation 8. These uprights are connected at intervals by cross-beams 3 and longitudinal beams 4. Eight uprights are employed, with four of them at the corners of a square disposition of the uprights; the other four uprights being offset from opposite sides of the interior square arrangement, there being two offset from each of the opposite sides of the square. Connecting several of the frame parts are the diagonal braces 5 to withstand the torsional strain imparted to such structures. The general arrangement of the framework is such as to provide the tower with a central well and opposite wing extensions. Projecting from the outer face of each wing extension are the floor girders 6, hinged at their inner ends to the outer uprights 2. Each girder is suspended by a tension element or stay 7, attached to the outer end of the girder and connected with an upper part of the upright carrying the girder.

Girders are provided for each floor of the building and on these girders are mounted the walls of the single floors of the construction. Extending from the inner side of the tower are the beams 1 to connect the unit with an adjacent unit of the structure.

The tower so constructed provides a central well for the elevators, stairs and other appurtenances of lofty buildings; the floor elements are easily assembled and joined together to support the walls and other parts; and the restricted cross-area of the tower permits an economical use of the ground space for the foundation supporting the tower.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:

1. In a building structure, the combination of a foundation, with a metallic frame comprising a plurality of uprights symmetrically mounted on the foundation to provide a main supporting column, transverse beams uniting the uprights, opposite series of floor girders respectively extending horizontally in balanced relation from opposite sides of the supporting column, said girders being hinged at their inner ends to the supporting column, and suspension elements connecting the outer ends of the floor girders with upper parts of the uprights to maintain said girders in their horizontal positions.

2. In a building structure, the combination of a foundation, with a metallic frame comprising a plurality of uprights mounted on the foundation to provide a main supporting column, said uprights being arranged to impart a rectangular cross-area to the supporting column with the uprights at the corners thereof, transverse beams uniting the uprights, opposite series of horizontal wing frames respectively extending horizontally in balanced relation from opposite sides of the supporting column, each of said wing frames consisting of two opposite girders connected at their outer ends and hinged at their inner ends to the supporting column, a cross-beam connecting the inner parts of the opposite girders of each wing frame, a diagonal wind brace connecting the cross-beam in the inner part of each wing frame with the uprights, and a suspension element connecting the outer end of each wing frame with an upper part of the supporting column to maintain the wing frame in horizontal position.

3. Building construction comprising a metallic central tower bearing in each floor a girder hinged at one end to the tower suspended at the free end by means of tension members attached to the tower in an upper point, another girder being provided identical with the first and symmetrically arranged in each floor on the opposite side of the tower, the girders of the single floors being arranged one above the other, the vertical walls of the single floors of the construction being mounted on each girder.

GUIDO FIORINI.