

C. H. SNYDER.
 HEAD FRAME AND HAUNCH REINFORCE FOR STEEL BUILDINGS.
 APPLICATION FILED JULY 31, 1912.

1,128,912.

Patented Feb. 16, 1915.

Fig. 1.

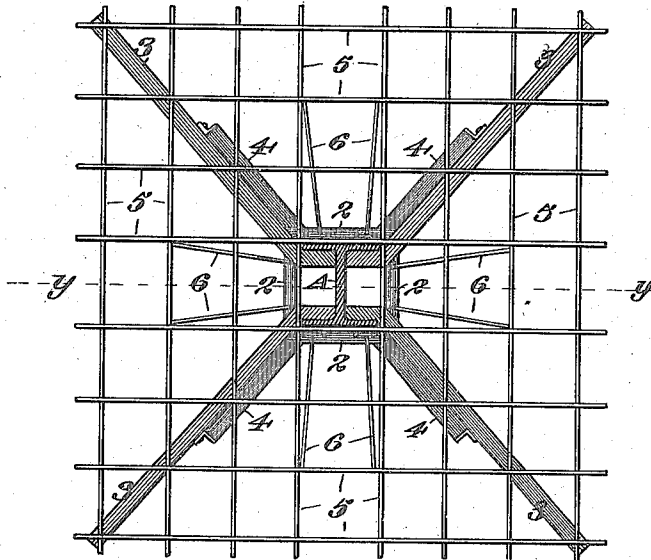


Fig. 2.

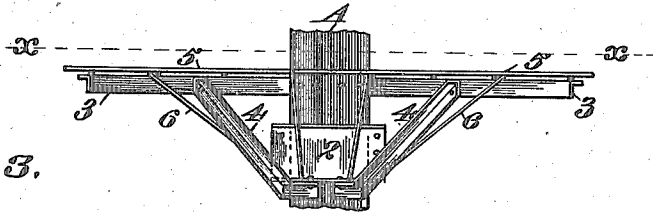


Fig. 3.

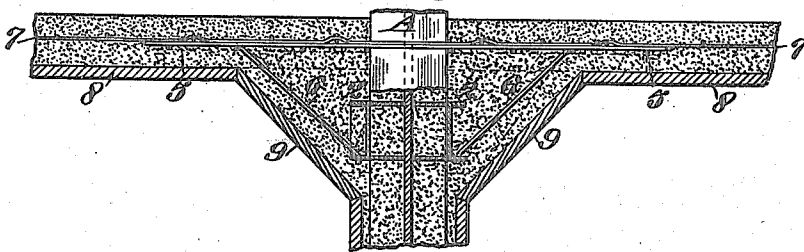
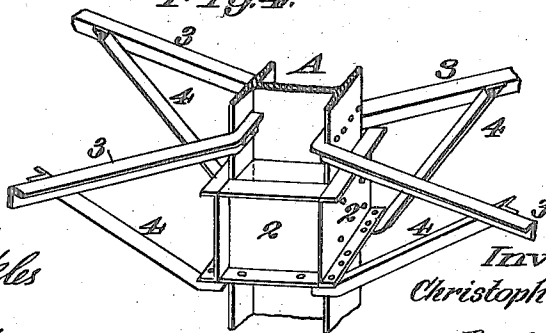


Fig. 4.



Witnesses.
 Charles Pickles
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UNITED STATES PATENT OFFICE

CHRISTOPHER H. SNYDER, OF BERKELEY, CALIFORNIA.

HEAD-FRAME AND HAUNCH-REINFORCE FOR STEEL BUILDINGS.

1,128,912.

Specification of Letters Patent.

Patented Feb. 16, 1915.

Application filed July 31, 1912. Serial No. 712,472.

To all whom it may concern:

Be it known that I, CHRISTOPHER H. SNYDER, a citizen of the United States, residing at Berkeley, in the county of Alameda and State of California, have invented new and useful Improvements in Head-Frames and Haunch-Reinforces for Steel Buildings, of which the following is a specification.

My invention relates to building construction and pertains especially to a fabric-support and haunch-reinforce for steel and concrete construction.

The present invention is particularly applicable, and is especially designed, for use in buildings having steel columns and a reinforced concrete floor slab, as distinguished from columns made up of loose rods and concrete, or what is known as a "reinforced concrete" column. In the latter case it is common to have the reinforcement, which enters into the composition of the column, extend into the floor slab and form a support for, and be a part of the floor slab. In my case, the steel column, haunch-reinforce and fabric-support, comprise a rigid, unitary structure, self-supporting independent of any concrete.

The object of the present invention is to devise a simple, practical, structural head-frame, for supporting the fabric and carrying the load, which head-frames can readily be made in the shop, and erected with a steel frame complete, before the concrete work is started. Temporary forms may then be put up and the mesh or rods for the flooring reinforce unrolled, or laid at the job by common labor. Thus doing away with practically all blacksmithing, or other skilled work.

The invention consists of the parts and the combination and construction of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a horizontal section on line $x-x$, Fig. 2. Fig. 2 is a side elevation of Fig. 1. Fig. 3 is a vertical section on line $y-y$, Fig. 1, showing completed structure. Fig. 4 is a detail perspective view of the upper end of a column.

A represents a steel column to which my improved head-frame is applied. This head-frame consists in part of a flanged girdle 2 bolted to the column at each floor level; this girdle 2 being made of a suitable

rolled structural shape, either of angle or channel iron, with the flanges projecting outwardly to form a shelf to support the concrete at that point. I have here shown this girdle 2 as made up of sections of channel iron bolted with their backs to the column and extending completely around the column.

Immediately above the girdle 2 are a series of cantaliver arms 3 preferably of angle iron and secured to the column; there being one of these arms 3 for each corner of the column and extending diagonally in a horizontal plane, and adapted to be entirely embedded in the concrete of the finished floor slab. Each of these flaring, radial arms 3 is suitably supported below by a haunch-brace or bracket 4, also preferably of angle iron; the bracket 4 being stepped on or secured to, or secured to the column adjacent to, the lower flange of the girdle 2. Upon the radiating arms 3 are laid a series of short rods 5 in checker-board fashion, forming a sort of grid around the column.

6 are inclined rods which connect the lower flange of the girdle with the grid, and provide in conjunction with the bracket arms 4 a substantial reinforce to the haunch. The bracket arms 3 with the braces 4 and grid 6 constitutes my improved cantaliver head-frame to support the wire fabric 7 of the floor slab, and to transmit the weight into the steel column.

In practice the head-frame is constructed on to the columns, generally one floor at a time. When the braces, brackets and grids are in place, I build a temporary wood floor mold 8 having inverted pyramidal boxes 9, formed about the inclined braces 4 and rod 6. The floor 8 forms a support for the wire fabric 7 and for the concrete which is poured over it. The wire mesh 7 comes in rolls about 8 ft. wide, and is laid at right-angles and diagonally with respect to each column. By this arrangement of reinforcement I obtain practically a flat floor slab of great strength and lightness, without beams or girders; the cantaliver head being within the slab and carrying the load into the steel column; the flanged girdle 2 forming a supporting shelf for the concrete; the excess bending movement at the column being taken care of by the additional grid arrangement 5.

Experience shows that a steel fire-proof

building of great strength and rigidity can by this method be erected quickly and economically.

By the use of the term "steel columns" I include as a matter of course a cast iron column, or any metal column having inherent rigidity.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

A cantaliver head frame for steel building construction, consisting in the combination with a solid metal flanged column having inherent rigidity and designed to carry all the load, of a flanged girdle secured to the column beneath the plane of a floor level and transmitting the floor load to the metal column, said girdle being adapted to be po-

sitioned at any point desirable throughout the length of the column, radially extending horizontal rigid metal angle iron arms arranged substantially midway between the upper and lower surfaces of the floor slab and having their inner ends bent inwardly and secured to the metal column, and angle iron knee braces footing on the girdle, and having their outer ends secured to said horizontal arms, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

CHRISTOPHER H. SNYDER.

Witnesses:

WALDO E. DODGE,
ELSIE DUTTON.