

F. A. WILLIAMS.
 Column for Elevated Railways.
 No. 224,568. Patented Feb. 17, 1880.

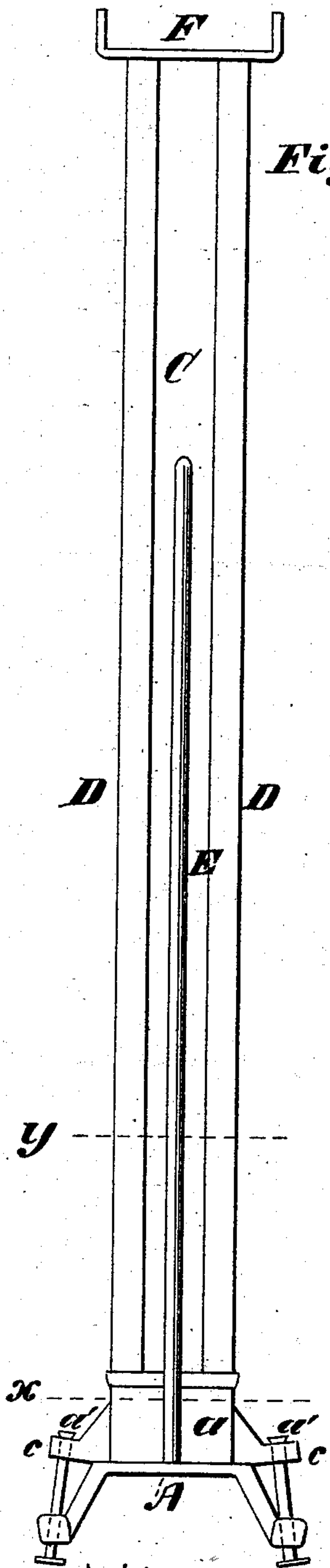


Fig. 1.

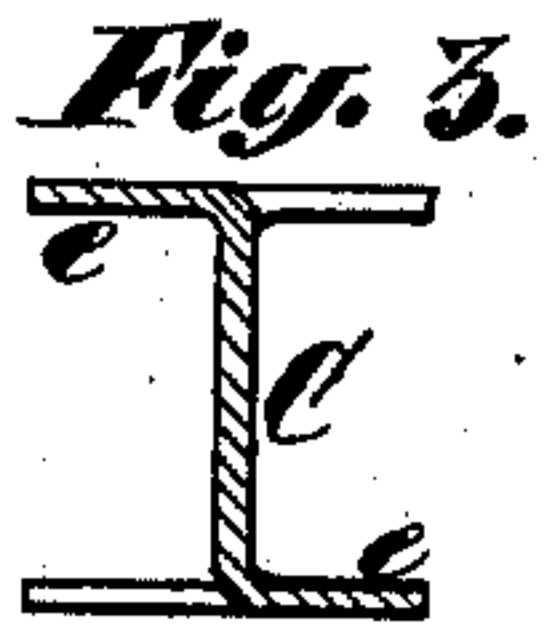


Fig. 4.

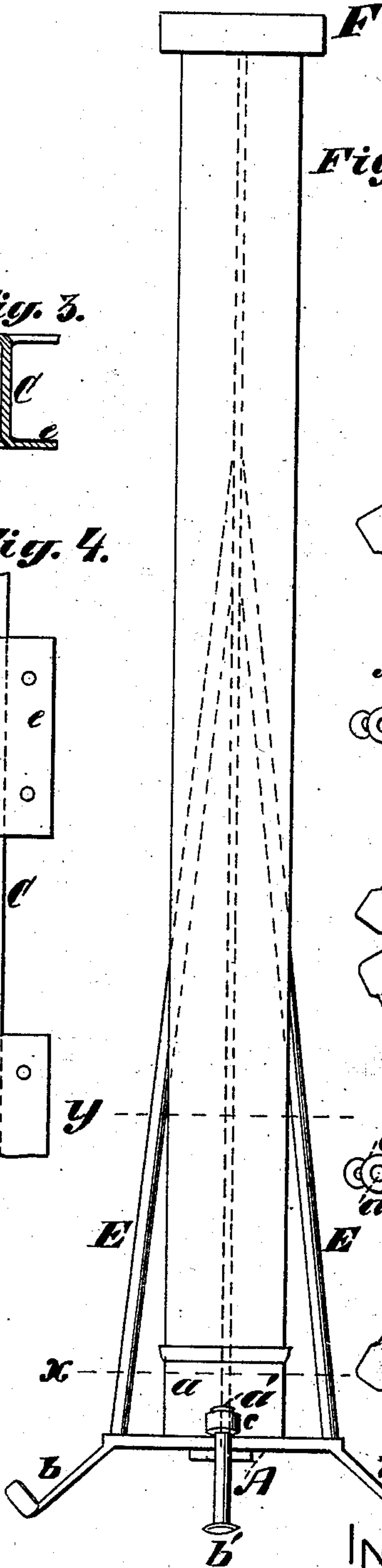
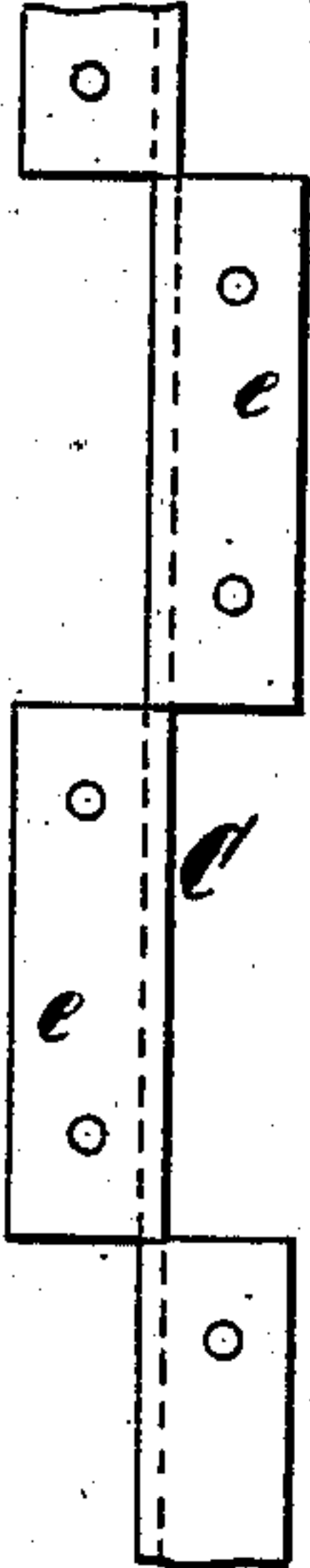


Fig. 2.

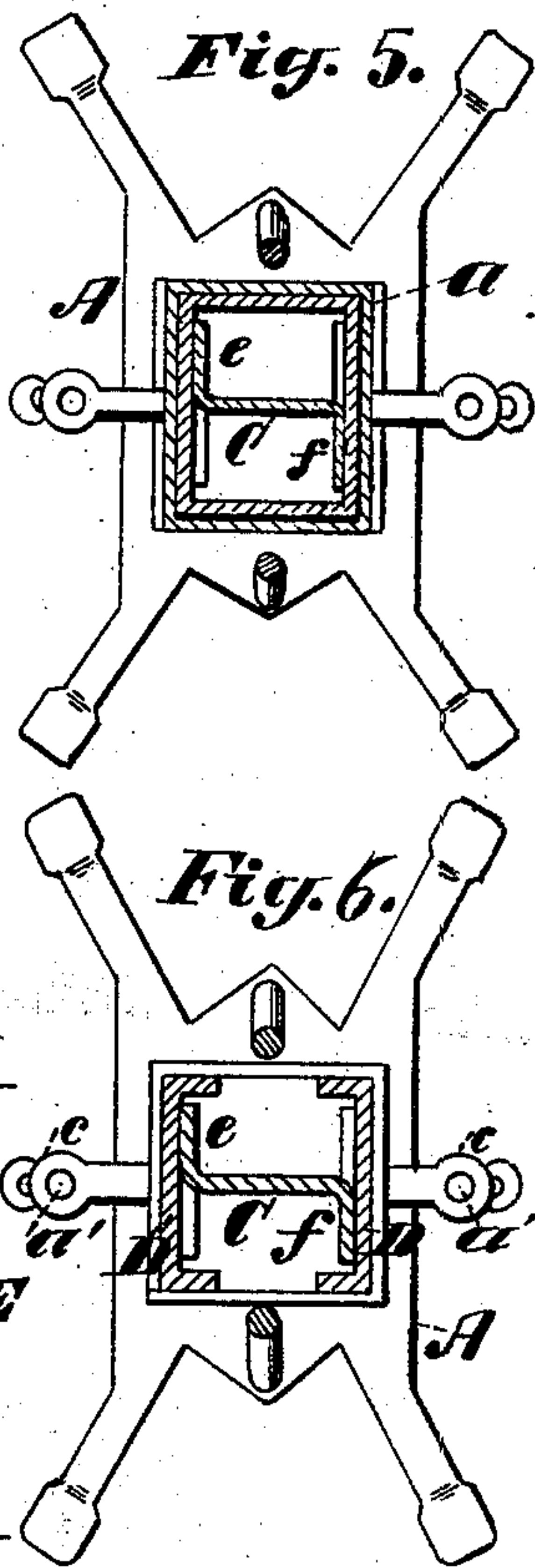


Fig. 5.

Fig. 6.

Witnesses.
 H. R. Parker.
 Cha. H. Doxat

INVENTOR.
 Francis A. Williams
 Per James A. Whitney
 ATTORNEY.

UNITED STATES PATENT OFFICE.

FRANCIS A. WILLIAMS, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF OF HIS RIGHT TO ALBERT A. DRAKE, OF SAME PLACE.

COLUMN FOR ELEVATED RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 224,568, dated February 17, 1880.

Application filed November 11, 1879.

To all whom it may concern:

Be it known that I, FRANCIS A. WILLIAMS, of the city, county, and State of New York, have invented certain Improvements in Elevated Railways, (Case C,) of which the following is a specification.

This invention relates to the construction of posts or pillars for elevated railroads, which, because of the enormous strain incident to their use, require vertical supports of great strength, permanence, and rigidity; the object of my said invention being to provide a vertical support for such railroads which will combine in itself the merits just hereinbefore indicated together with those of great simplicity of construction and moderation of cost.

My said invention comprises a pillar having its vertical portion composed of two lateral plates of double angle-iron connected by a central plate the two edges of which are formed with flat wings or leaves turned in opposite directions at right angles to the said central plate, to afford flat bearing-surfaces for the attachment of the double angle-irons thereto, to form a strong and stiff column with a minimum of material and expense, the parts just mentioned being combined with a suitable base calculated to be more or less embedded in and supported by the ground.

The invention further comprises a novel combination, with the parts just hereinbefore specified, of two straining-bars extending from the central portion of the pillar downward to the base, and serving to rigidly connect the base with the pillar and retain it in suitable relation thereto.

The invention also comprises a novel combination of loose anchor-bars with the base of the pillar in such a manner as to re-enforce the fixed anchor-bars of said base in sustaining the pillar against lateral tilting or displacements.

Figure 1 is a side view of a pillar and its base embracing my said invention. Fig. 2 is also a side view of the same, but taken in a plane at right angles to Fig. 1. Fig. 3 is a cross-section of the central plate of the column detached, and Fig. 4 an edge view of the same. Fig. 5 is a horizontal sectional view of the structure, taken in the line *x* of Figs. 1 and 2; and Fig. 6 is a like view taken in the line *y y*.

A is the base, having a square socket, *a*, to receive the lower end of the vertical portion of the pillar hereinafter described. This base is provided with fixed anchor-bars *b*; also with laterally-projecting tubular lugs *c*. Through these lugs are passed strong bars *a'*, preferably of a cylindric form, and each formed at the upper end with a head, *a'*, to prevent its drawing out from its lug *c*, and at its lower end with a broad disk, *b'*. The object of these bars with the enlarged ends *b'* is to serve as supplemental anchors to the base, and from their being loose in the lugs *c* they are able to adjust themselves to the masonry filled in or formed around them in the usual manner, and therefore give a firm hold against any upward movement of the adjacent edges of the base.

The central portion of the vertical part of the pillar is composed of the flat iron plate C, the lateral or edge portions of which are cut through horizontally, so that each alternate division at each edge may be turned at right angles to the plane of the said central plate in a direction opposite to that of the next adjacent divisions, thus forming wings *e*, as more fully shown in Fig. 4, whereby the double angle-iron sides may be firmly bolted or otherwise secured to the central plate aforesaid, as illustrated in Figs. 5 and 6.

D D are two plates of double angle-iron, the cross-section and relative positions of which are more clearly illustrated in Fig. 6, one of the plates D being securely bolted to the longitudinal series of wings *e* at one edge of the central iron or plate, C, while the other of the said plates is in like manner attached to a like series of wings, *e*, at the opposite edge of said central iron, C. This attachment of the double angle-irons D D to the central iron, C, is secured by bolting, riveting, or any other approved means. The bottom of the vertical portion thus constructed and composed is inserted in the square socket *a* of the base A, and straining-bars E are extended, one on each side of the central iron, C, from the upper portion of said central iron, C, down to the base A, as represented in Figs. 1 and 2, thereby firmly securing the vertical portion of the pillar to the said base and preventing it from tilting laterally thereon. At the top of the pillar is placed a suitable bearing-socket, F,

for the reception of the appropriate portions of the superstructure.

What I claim as my invention, in a pillar for elevated railroads and other like structures, is—

5 1. A central iron, C, having its edge portions formed with the wings *e*, in combination with the two double angle-irons D and a base, A, for receiving the bottom of the parts aforesaid, all substantially as and for the purpose herein set forth.

10 2. The combination of the straining-bars E with the central angle-iron, C, having its edges turned, as described, the double angle-irons D, forming the lateral portions of the pillar, and

a base for receiving the bottom or lower ends 15 of the parts aforesaid, the whole constructed and arranged for joint use, substantially as and for the purpose herein set forth.

3. The loose anchor-bars *a'*, in combination with the lugs *c* of the base A and the vertical 20 portion of the pillars sustained by the said base, all substantially as and for the purpose herein set forth.

FRANCIS A. WILLIAMS.

Witnesses:

JAMES A. WHITNEY,

H. F. PARKER.