C. SALVATIERRA-IRIARTE.

SKELETON FRAME FOR ARMORED CONCRETE POSTS OR MASTS.

APPLICATION FILED JULY 7, 1913.

1,215,872.

Patented Feb. 13, 1917.

2 SHEETS—SHEET 1.

Fig. 1.

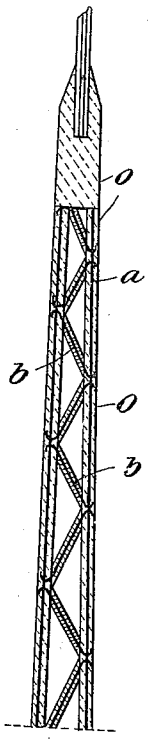


Fig. 2.

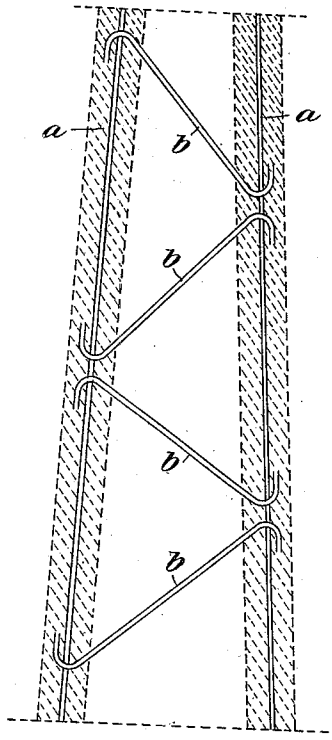


Fig. 3.

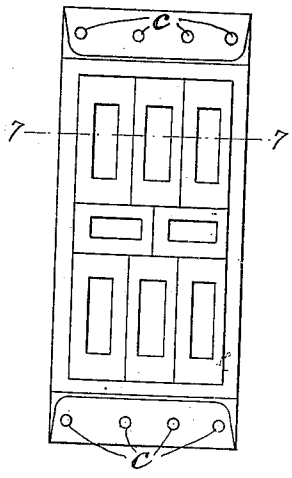
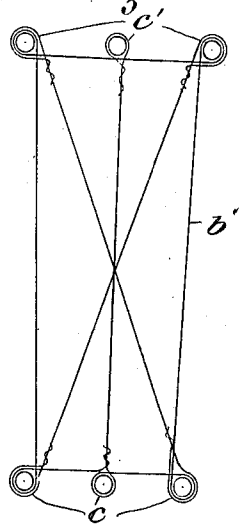


Fig. 4.



Witnesses

J. M. Copenhaver

J. Morris

Inventor

Cipriano Salvatierra-Iriarte

by Wm. H. Babcock & Son

Attorneys

THE NORRIS PETERS CO., WASHINGTON, D. C.

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2 SHEETS—SHEET 2.

Fig. 5.

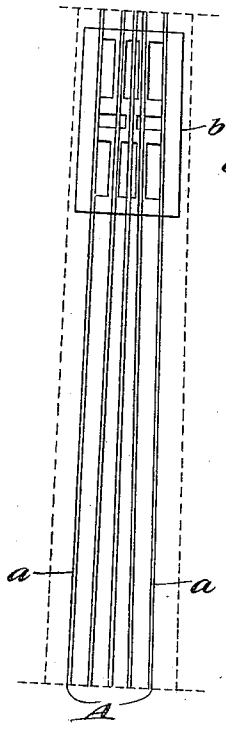


Fig. 6.

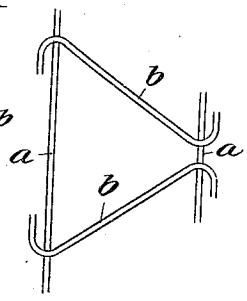


Fig. 7.



Witnesses
G. M. Copenhaver.
G. Morris

Inventor
Cipriano Salvatierra-Iriarte
by Wm. H. Babcock & Son
Attorneys

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CIPRIANO SALVATIERRA-IRIARTE, OF MADRID, SPAIN.

SKELETON FRAME FOR ARMORED CONCRETE POSTS OR MASTS.

1,215,872. Specification of Letters Patent. Patented Feb. 13, 1917.

Application filed July 7, 1913. Serial No. 777,746.

To all whom it may concern:

Be it known that I, CIPRIANO SALVATIERRA-IRIARTE, a citizen of Spain, residing at 33 Tacometrezo street, Madrid, in the Province of Madrid, Spain, have invented certain new and useful Improvements in Skeleton Frames for Armored Concrete Posts or Masts, of which the following is a specification.

This invention relates to reinforced concrete or cement posts, poles or masts intended for use as telegraph and telephone posts or poles and for other purposes. The chief object of said invention is to reduce to a minimum the amount of cement employed in such a structure and thus secure the utmost practicable lightness therein, while retaining the requisite strength and height. To this end I employ a metallic skeleton on which the cement is molded, said skeleton consisting of two upright metallic series of parallel rods, which converge upward toward each other, and inclined transverse openwork plates (or frames) interlocked at their ends with said upright frames and arranged in zigzag fashion. On this skeleton the cement or concrete is molded so as to leave triangular openings through the completed post or mast from side to side.

My invention consists in the construction and combination of parts constituting the post or pillar; substantially as set forth.

In the accompanying drawings:

Figure 1 represents a vertical longitudinal section of a completed post embodying my invention, the wire-support at the top thereof being slightly broken away;

Fig. 2, a similar view on an enlarged scale of a part of such a post, the cement on the upright rods being indicated by dotted lines and the cement of the inclined transverse plates being omitted as if not yet applied;

Fig. 3, in detail plan view, enlarged, one of these transverse openwork plates or frames;

Fig. 4, a substitute wire frame;

Fig. 5, a front elevation of a part of one of said upright series of rods corresponding to the part of the post shown in Fig. 2, showing also one of the transverse plates or frames, this view being taken at right angles to the latter figure and drawn on the same scale, the side borders of the post being indicated by dotted lines;

Fig. 6, a detail elevation, taken from the same point of view as Figs. 1 and 2, of parts of the upright series of rods and two of the inclined transverse frames illustrating their interlocking;

Fig. 7, a transverse section on line 7—7 of Fig. 3, slightly modified.

Two upright gradually converging frames A, Fig. 5, each composed of a series of upright rods *a*, Figs. 1, 2, 5 and 6, are connected by transverse inclined openwork frames or plates *b*, Figs. 1, 2, 3 and 7, having a zigzag arrangement, these parts *a* and *b* constituting together the metallic skeleton of the pillar or post on which the cement or concrete *o* is molded. The ends of these plates *b* are provided with holes *c*, Fig. 3, through which the rods *a* are passed individually, keeping the latter separated and completing the skeleton frame. The ends of the plates *b* are then bent over, as shown in Figs. 2 and 3, to make the said plates bind on said rods and fasten them. The metal between the holes of these openwork plates may be raised or embossed, as shown in Fig. 7, to hold the cement more securely and for greater strength in the plate. The rods *a* of each series are arranged side by side at convenient intervals and converge upwardly to correspond to the narrowing of the side of the tapering post. The two series of rods also necessarily incline toward each other conforming to such taper.

The wire frame *b'* having eyes *c'* at its ends for receiving the rods *a* may be substituted for the plate or frame *b* with advantage in some instances.

The zigzag frames or plates *b* or *b'* constitute connecting and bracing devices for the two series of upright rods and hold these in place, beside also holding in place and bracing the individual rods *a* of each series. The said connecting devices, with their concrete or cement covering also form inclined partitions between said openings. The latter are alternately on opposite sides of the central upright line of the two broader faces of the post or pole. The latter is necessarily quadrilateral in cross-section as there are several rods *a* in each series and as these are parallel to each other. Preferably the sides corresponding to these series of rods are not so broad as the other sides of the pillar and are equal in width to each other, giving it the form of an elongated rectangular, quadrilateral parallelogram, though this need not be exact. The quadrilateral form thus reinforced at the sides and transversely on

alternately reversed inclined lines is exceedingly strong in its resistance to the sweep of the wind, and the said openings of course lessen the effect of the latter, beside making the pole lighter. The greatest attainable strength, most advantageous bracing action and reduced opposition to the wind are important considerations in tall tapering structures often erected in very exposed places.

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

A reinforced tapering concrete pole which is an elongated quadrilateral in cross-section and is crossed by triangular openings through its two longer sides in regular series at successive points of its height alternately on opposite sides of a central line, said openings being separated from each other by inclined partitions of reinforced concrete arranged in zigzag order, the skeleton of said pole consisting of two upright series of raised parallel rods, said series tapering upward toward each other, and a series of interposed connecting devices having eyes for the individual rods and supplying the skeletons of said partitions, each of such devices being adapted to engage at each end all the rods of one upright series and to hold in position and brace each series and hold in position and brace each individual rod.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

CIPRIANO SALVATIERRA-IRIARTE.

Witnesses:
FREDERICO ESPAARO,
ALFONSO AUSVAINO.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."