

No. 780,320.

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S. B. BURKHOLDER & C. G. GEYER.

CONCRETE COLUMN.

APPLICATION FILED JULY 27, 1904.

Fig. 1.

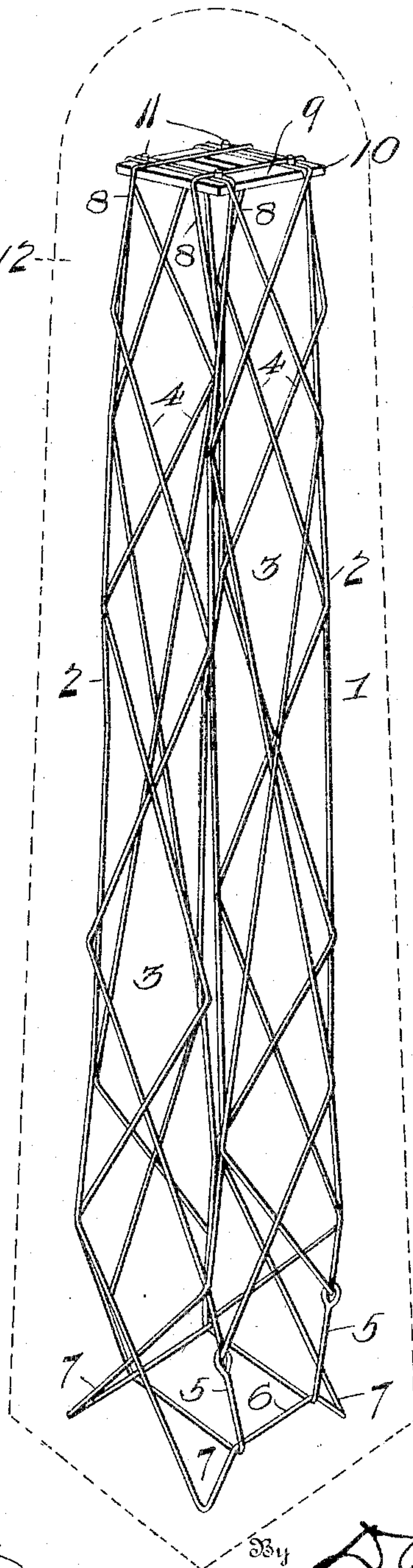


Fig. 2.

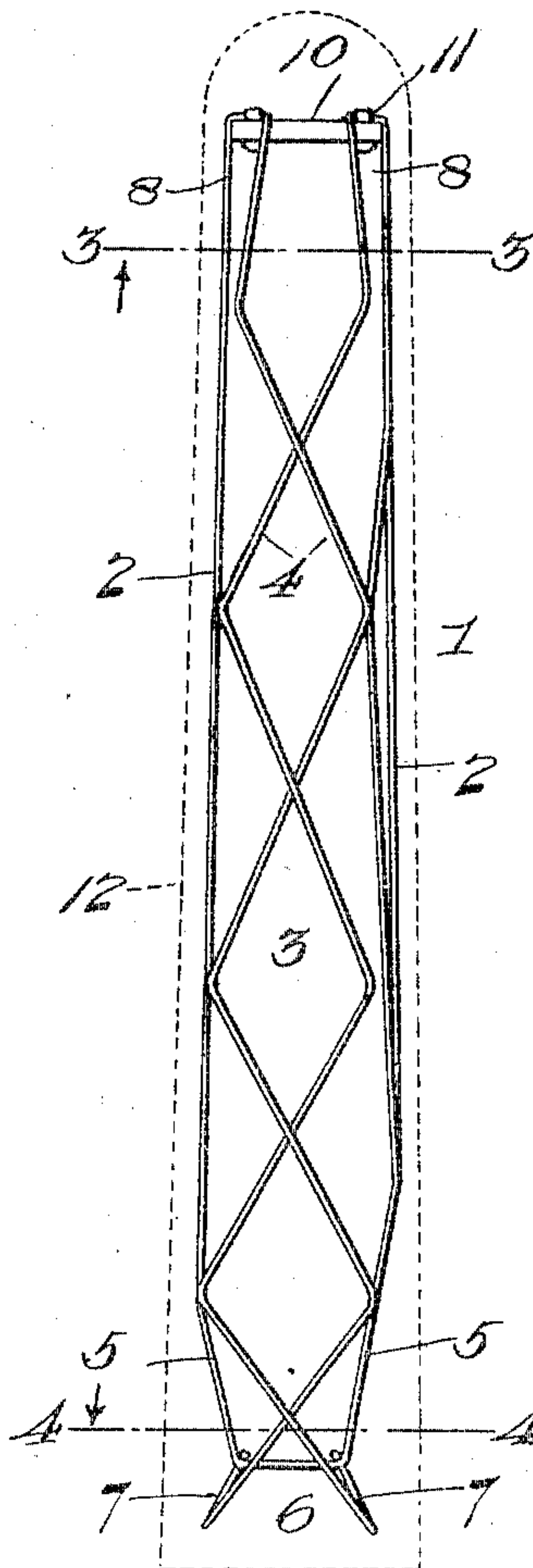


Fig. 3.

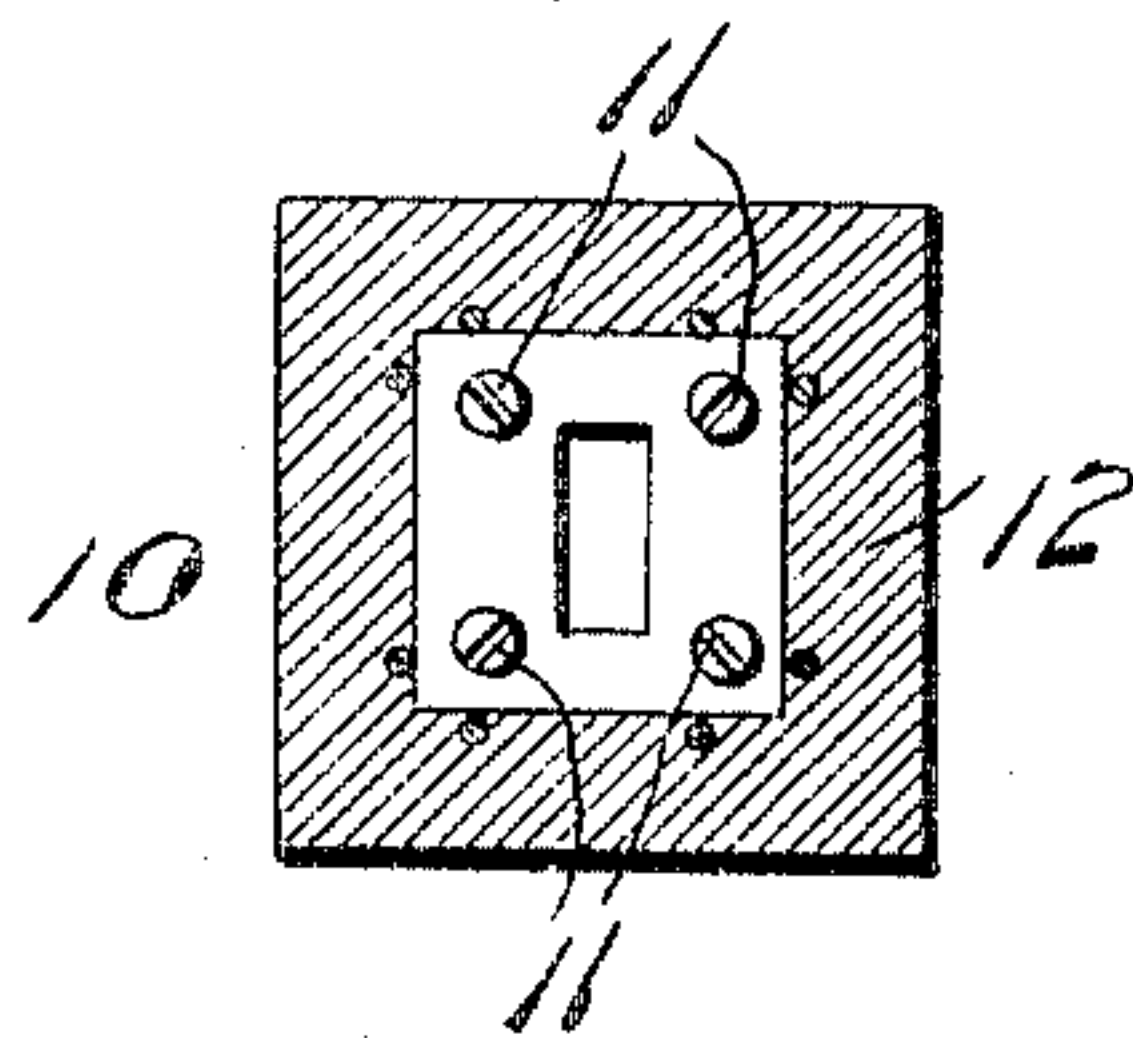
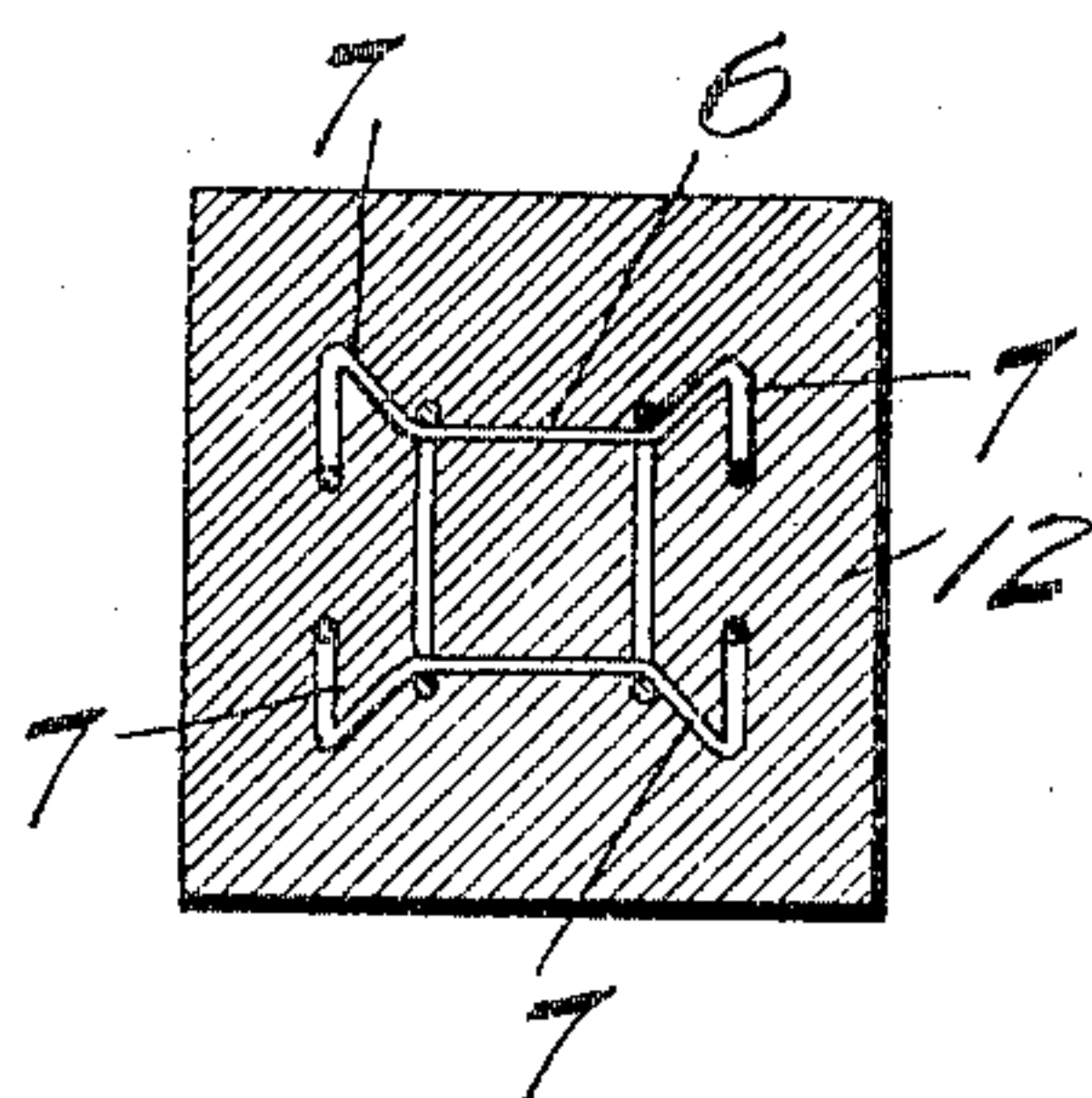


Fig. 4.



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UNITED STATES PATENT OFFICE.

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CONCRETE COLUMN.

SPECIFICATION forming part of Letters Patent No. 780,320, dated January 17, 1905.

Application filed July 27, 1904. Serial No. 218,417.

To all whom it may concern:

Be it known that we, SAMUEL B. BURKHOLDER, residing at West Leipsic, and CHARLES G. GEYER, residing at Leipsic, in the county of Putnam and State of Ohio, citizens of the United States, have invented certain new and useful Improvements in Concrete Columns, of which the following is a specification.

This invention relates to plastic bodies of the concrete and metal type, and has in view an improved concrete column possessing special utility as a fence-post and also as a structural column or pole for telephone and telegraph wires.

To this end the invention contemplates a concrete column of a thoroughly-trussed formation and which is practically indestructible under weather or other conditions. In this connection the invention not only includes a concrete body-filling, but also an interior skeleton trussing-frame maintained under a stretching tension and so constructed as to provide a maximum strength for the concrete body throughout every portion thereof not only at its sides, but also at the extremities of the same.

With these and other objects in view, which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts, which will be hereinafter more fully described, illustrated, and claimed.

The essential feature of the invention involved in the peculiar construction of the interior trussing core-frame is necessarily susceptible to structural modification without departing from the scope of the invention; but a preferred embodiment thereof is shown in the accompanying drawings, in which—

Figure 1 is a perspective view of a concrete and metal column constructed in accordance with the present invention, said view exposing the skeleton core-frame in full lines and the concrete body in outline. Fig. 2 is an elevation of a fence-post embodying the present invention, showing the core-frame in dotted lines. Figs. 3 and 4 are cross-sectional

views on the lines 3 3 and 4 4 of Fig. 2, respectively.

Like reference-numerals designate corresponding parts in the several figures of the drawings.

In carrying out the invention the concrete and metal column, post, or pole constituting the same is designed to be constructed within a suitable mold or molding apparatus; but as the latter forms the subject-matter of a companion application filed of even date herewith the description herein will be restricted to the structural elements of the column forming the novel features of the invention.

In the construction of the concrete and metal column there is first built up within or upon a suitable form or mold a skeleton core-frame, (designated in its entirety by the numeral 1.) This skeleton core-frame is formed from a single wire or a plurality of wires woven into a trussed framework of the general form and construction plainly illustrated in Fig. 1 of the drawings. Referring particularly to this figure of the drawings, it will be observed that the wire skeleton core-frame 1 is of an oblong rectangular form and the wire lengths are so arranged as to provide well-defined reinforced corner-strands 2, extending the full length of the frame. Also the wire lengths are so disposed as to provide the trussed frame side portions 3, formed by diagonally lacing and crossing strands or portions 4 of the wire or wires continuously back and forth from said longitudinal corner-strands 2, thus effecting a binding together of all of the corner-strands, while at the same time providing a network of diagonal trussing upon all of the sides of the core-frame throughout the full extent thereof.

At what may be termed the "bottom" or "lower" end of the core-frame 1 the wire or wires constituting the same are converged downwardly and inwardly, as indicated at 5, and at the lower end of the downwardly-convergent sections 5 there is provided a horizontal rectangular wire base 6. From the corners of this bottom horizontal wire base 6 the wire or wires are looped downwardly to

form the terminal outwardly-divergent pendent strengthening-spurs 7, which are of special utility in a fence-post structure by extending well into the four bottom corners of the post or column, and thus securing an exceptionally strong reinforcement of the said post or column at the base thereof. In any adaptation of the invention this bottom formation of the core-frame provides for imparting exceptional strength to the base of the column.

At the upper end of the wire core-frame 1 the wire lengths forming the longitudinal corner-strands 2 are separated, as at 8, and passed laterally across the corrugated top holding-surface 9 of a metal cap-plate 10, which is arranged horizontally within the upper end portions of the body of the column. These separate wire lengths 8 at the top corners of the core-frame cross each other at or near the corners of the cap-plate and are held spaced in this crossing relation by the retaining-studs 11, projected upwardly from the corner portions of the plate 9 and engaged by the wire lengths 8 at their points of intersection.

Through the medium of suitable tension or stretching appliances the wire core-frame 1 after being shaped into the form described is placed under a stretching tension and while under that tension is filled and enveloped with a plastic body-filling 12, which is given the desired exterior configuration according to the use of the column as a fence-post, as a telephone or telegraph pole, or simply as a column for structural purposes. In any form the trussed side portions and the corner-strands of the stretched core-frame lie a short distance beneath the outer surface of the plastic body-filling and serve to support, protect, and strengthen the same. The plastic body-filling may be made up of any concrete material suitable for the purpose, such as cement and mortar, with or without other ingredients, although good results have been secured by using a mixture of mortar and excelsior. The plastic material is allowed to set about the cap-plate and core-frame while the latter remains under a stretching tension, so that this tension is maintained by the cap-plate in the completed hardened column, thus

securing a maximum binding and trussing effect.

From the foregoing it is thought that the construction, operation, and many advantages of the herein-described concrete column will be readily apparent without further description, and it will be understood that changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit of the invention or sacrificing any of the advantages thereof.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. A concrete and metal column comprising a trussed core-frame under a stretching tension and provided with a base, side portions and a top portion, and means, cooperating with the body-filling, for maintaining said frame under the stretching tension.

2. A concrete and metal column comprising a skeleton wire core-frame under a stretching tension and provided with trussed side portions, a cap member at the top and base strengthening-spurs at the bottom, and a concrete body filling and enveloping said frame.

3. A concrete and metal column comprising a skeleton core-frame consisting of a cap-plate, and a wire body portion strung at the top across and over the cap-plate and having a network of diagonal trussing, and a concrete body filling and enveloping said frame.

4. A concrete and metal column comprising a skeleton core-frame consisting of a cap-plate having a plurality of upstanding retaining-studs and a wire body portion having corner-strands crossing over the cap-plate at one side of said retaining-studs, trussed side portions, and a bottom portion including a horizontal wire base, and outwardly-divergent pendent strengthening-spurs projected from the corners of said wire base, and a concrete body filling and enveloping the core-frame.

In testimony whereof we affix our signatures in presence of two witnesses.

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