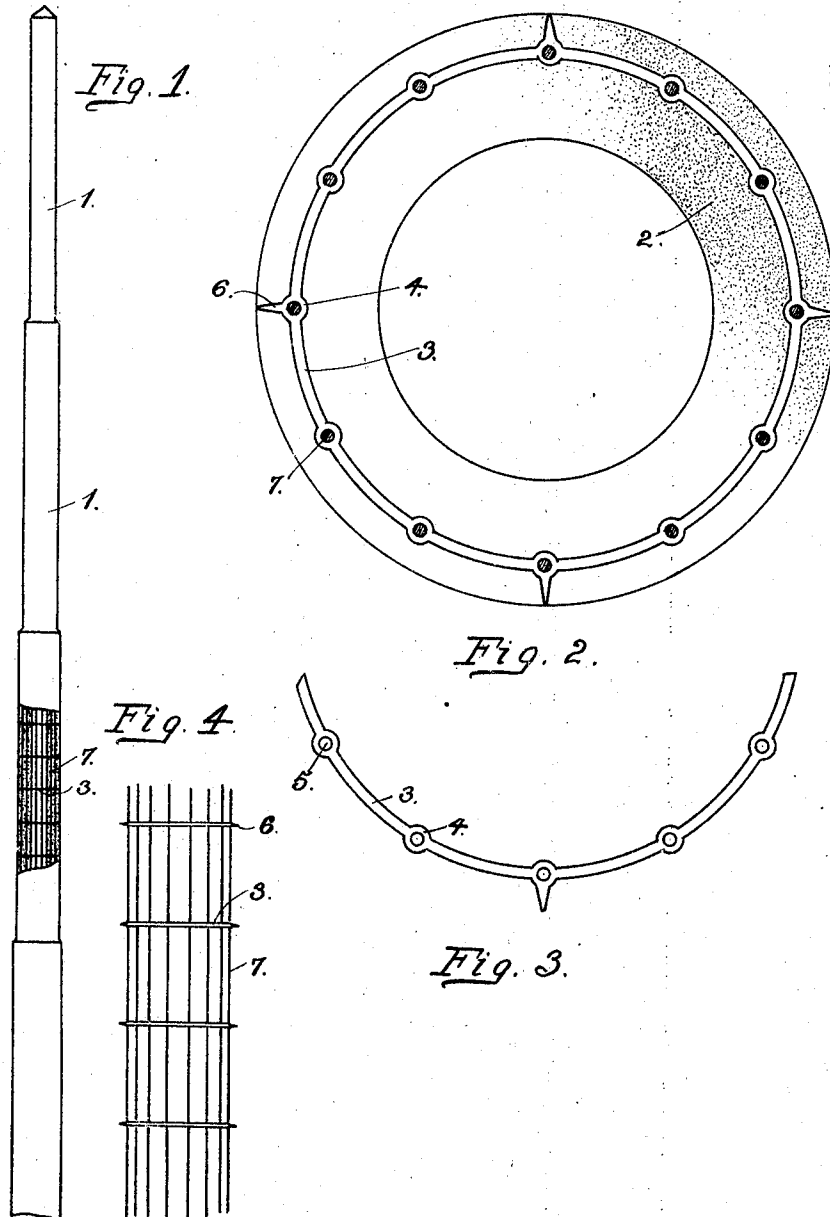


J. RUBELLO & J. SANTI.
 REINFORCED CONCRETE CONSTRUCTION FOR POSTS AND COLUMNS.
 APPLICATION FILED SEPT. 13, 1910.

987,172.

Patented Mar. 21, 1911.



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UNITED STATES PATENT OFFICE.

JOSÉ RUBELLO AND JUAN SANTI, OF MEXICO, MEXICO.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, JOSÉ RUBELLO and JUAN SANTI, subjects of the King of Italy, residing at Mexico city, Federal District, Republic of Mexico, have invented certain new and useful Improvements in Reinforced Concrete Construction for Posts and Columns, of which the following is a specification.

Our invention relates to a reinforced concrete construction for hollow posts, columns, pillars and similar construction made of cement or concrete by molding, in which the reinforcing members consist of a plurality of metallic rings embedded concentrically in the concrete and variably interspaced, all of the rings being united by wires or iron bars which run parallel through a number of perforations with which the rings are provided, or these wires may converge toward one end of the post in case that a somewhat conical form is desired.

Concrete structures made in accordance with our system will possess a high resistance to longitudinal pressure, and are therefore specially adapted for all kinds of poles.

In the drawing, Figure 1 represents a pole in elevation, part being broken away to show the collocation of the reinforcing rings and their connecting wires; Fig. 2 is a horizontal section of the pole wherein is seen embedded a ring; Fig. 3 is a detail view showing part of a reinforcing ring, while Fig. 4 shows the skeleton composed of the rings and connecting wires, as they remain before filling concrete into the molding box.

Referring to the drawing, we have illustrated, as an example, a pole composed of several sections (1), each of which tapers toward the point, and being manufactured of a cylindrical cover (2) of concrete, cement or other compound material, in which the rings (3) are embedded. Said rings 3, which are preferably made of cast-iron, are provided around their circumferences with equidistant integral spherical protuberances or knobs 4. The latter are provided with openings or perforations 5, which are either cast therein or subsequently bored, to permit the passage therethrough of the spaced wires or rods 7. The rings so constructed are economical in manufacture and permit a light and slender skeleton frame to be made with adequate strength and stability. At occasional points around the peripheries of the rings, as for instance, at four points in di-

ameters at right angles to each other on the circumference, the protuberances or knobs 4 are extended radially to form tapered pins or spikes 6, of equal length, said spikes or pins acting as additional reinforcing elements and positioning means for the whole reinforcing structure in the post, and also being a centering means for the reinforcing structure when the post or column is being cast, by spacing the structure from the interior of the mold. The wires (7) which as already said may be substituted by rods, run through the perforations (5) in the rings (3) and thus erected make up the reinforcing skeleton, particularly shown in the Fig. 4, in which all the wires run parallel intended for a pole or column of equal diameter throughout the entire length, and for which purpose are required a number of rings of exactly the same diameter.

In some instances it is for many reasons convenient to build poles and columns of a tapered form or in configuration like the "Mannesman" poles, and therefore it would be necessary to employ, at least in each section of the pole, rings of different diameter though the pole is molded in one piece; in this case the wires are given a slight curvature between the adjoining rings of two sections of different diameter. For making poles of one tapered section it is required to employ rings gradually decreasing in circumference, and the perforations should be bored or otherwise provided at a slight inclination toward the center, so that the connecting wires may follow a straight line inclined toward the top of the pole.

The mold and core, necessary for carrying out our invention, do not form part of our invention, and any form may be elected though we have found it convenient to adopt sectional molds and cores, the first being taken off in halves, and the core is easily driven out through the wider end of the hollow pole.

What we claim is:

1. A reinforce for concrete columns comprising in combination, a plurality of superposed apertured spacing rings, and a plurality of rods passing through the apertures in the rings to form a skeleton frame, said rings being provided with a plurality of projections extending beyond the outer periphery of the ring in order to space the ring at a predetermined distance from the mold.
2. A reinforce for concrete columns, com-

prising in combination, a plurality of spacing rings superposed in concentric relation, and a plurality of rods carried by said rings to form a skeleton frame, said rings consisting of annular members provided with integral knobs apertured to receive said rods in equidistant spaced relation, and externally provided with radially projected tapered pins of equal length to act as a centering means, said pins extending beyond the

outer periphery of the ring in order to space the ring at a predetermined distance from the mold.

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

J. RUBELLO.
JUAN SANTI.

Witnesses:

K. GRANDJEAN,
JOSÉ MATA.

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