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J. L. WELLER.

ELECTRIC TRANSMISSION POLE.

APPLICATION FILED JULY 29, 1904.

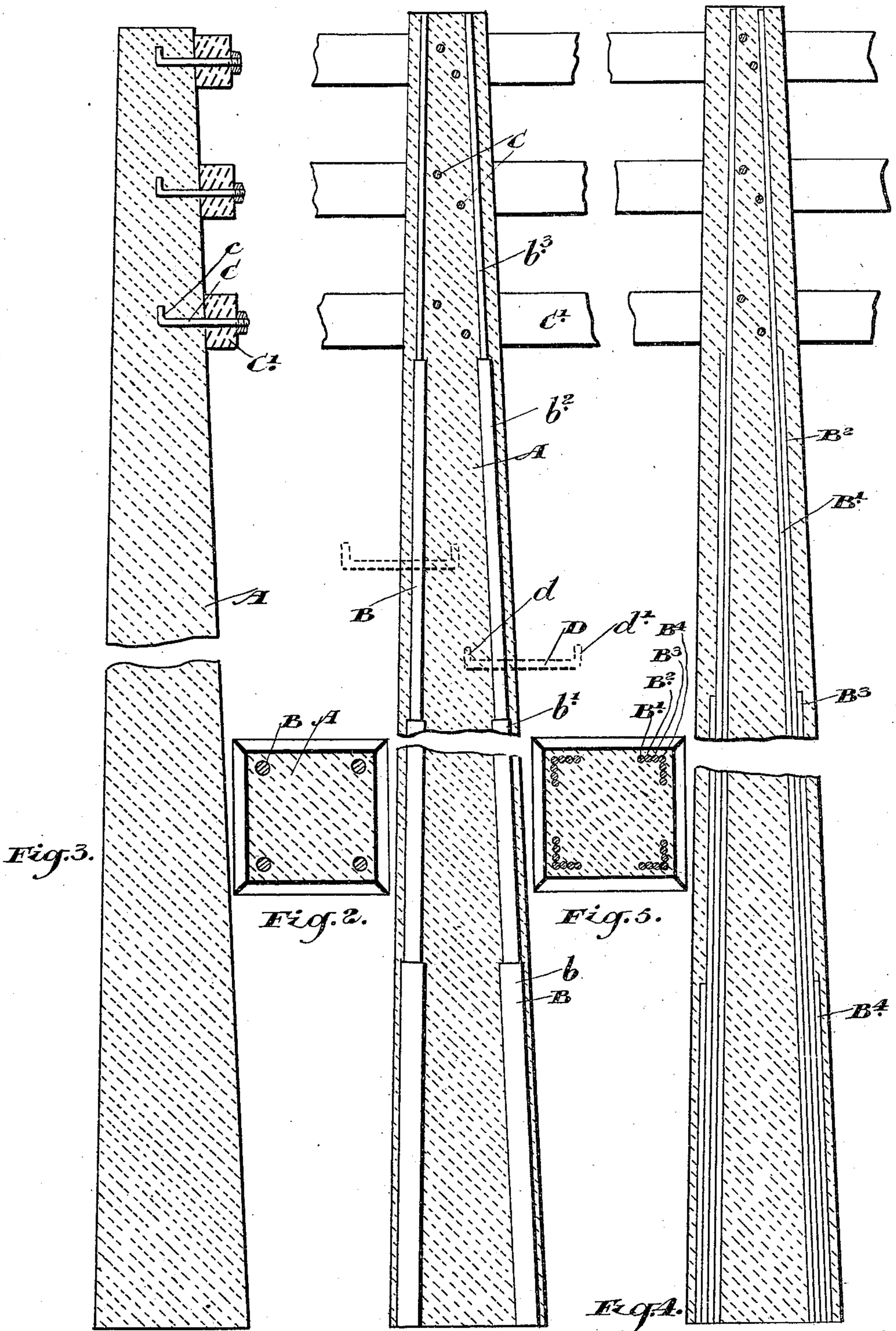

Fig. 3.

Fig. 2.

Fig. 5.

Fig. 1.

Fig. 4.

Witnesses.
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JOHN LAING WELLER, OF ST. CATHARINES, CANADA.

ELECTRIC-TRANSMISSION POLE.

No. 816,628. Specification of Letters Patent. Patented April 3, 1906.

Application filed July 29, 1904. Serial No. 218,699.

To all whom it may concern:

Be it known that I, JOHN LAING WELLER, of the city of St. Catharines, in the county of Lincoln, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Electric-Transmission Poles, of which the following is a specification.

My invention relates to improvements in electric-transmission poles; and the object of the invention is to construct a pole of concrete of such a cross-section at every point in its length that the concrete will be strong enough in itself to take up the compression and shearing and tensile stresses without injury to the pole; and subsidiary objects are to provide means for ascending the pole and for supporting the cross-arms; and it consists, essentially, of a pole provided with reinforcing-rods arranged with greater cross-sectional area at the bottom, such cross-section greatly diminishing toward the top, the said pole being provided with laterally-extending rods having spurs whereby such rods are secured in the pole to support the cross-arms or to form steps for ascent and descent of the pole, the parts being arranged and constructed in detail as hereinafter more particularly explained.

Figure 1 is a longitudinal section through a pole constructed in accordance with my invention. Fig. 2 is a cross-sectional plan of the pole. Fig. 3 is a longitudinal section of the pole at right angles to Fig. 1. Fig. 4 is a detail of an alternative form of pole. Fig. 5 is a sectional plan.

In the drawings like letters of reference indicate corresponding parts in each figure.

A pole for the purpose of carrying electric-transmission lines, lamps, trolley-lines, &c., is subjected to a transverse stress at or near its top, which stress tends to bend and break the pole by crushing the side of the pole which is in compression and by pulling apart the opposite side, which is in tension. It also tends to break by shearing. It is with the object of producing a pole in which these stresses will be counterbalanced that my invention is particularly designed.

A is the body of the pole, which is cast in a suitable mold, of cement or concrete, with reinforcing-rods B, such rods being made in sections b, b', b^2, and b^3, the cross-sectional area of which diminish from the bottom section to the top section and the rod of each section being suitably welded at the end to the adjacent section. These rods are placed in the cement pole as it is being molded and may be of course of any number. I preferably show four rods in Figs. 1 and 2.

The ends of the rods are preferably bent or enlarged, so that they will be less liable to slip. As the tensile stress increases gradually from the top of the pole downward to the ground, I make the rods as shown, the smallest being near the top and the largest near the bottom.

Instead of making the rods in the form shown they might be made to taper; but this would necessitate making special rods.

The pole may of course be made of any cross-section, such as square, round, or hexagon; but in all cases it would be larger at the bottom than at the top.

In molding also I provide rods C with spurs c, which are set into the soft concrete when the pole is being molded, the two spurs c serving to hold the rods securely in the pole, and thereby supporting the arms C'. I also provide rods D throughout the length of the pole and alternately arranged first at one side and then at the other, the rods D being formed with inner spurs d and outer spurs d', the inner spurs serving to hold the rod securely in the pole and the outer spurs serving the man climbing the pole from slipping.

In Figs. 4 and 5 I show an alternative arrangement of rods in which the main rods B' extend from the top to the bottom of the pole and rods decreasing in length B^2, B^3, and B^4 are provided adjacent thereto, such rods increasing in number toward the bottom of the pole, and thereby increasing the cross-sectional area of the reinforcements toward the bottom of the pole. These are arranged in cross-section in somewhat angle form, as indicated in Fig. 5.

Of course there may be other means for increasing the cross-sectional area of the rein-

forcing rods or means from top to bottom, and I do not wish to limit myself to the exact construction shown.

What I claim as my invention is—

In an electric-transmission pole, the combination with the main body of concrete, of a series of reinforcing rods or poles, each embedded longitudinally in the concrete and comprising several lengths of different sizes connected together end to end and located in proximity to the exterior of the pole, the cross-sectional area of each successive length decreasing from the bottom to the top of the pole as specified.

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Witnesses:
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