H. M. HUGHES & J. A. McCARTY.

POLE CONSTRUCTION.

APPLICATION FILED JAN. 8, 1915.

1,174,501. Patented Mar. 7, 1916.

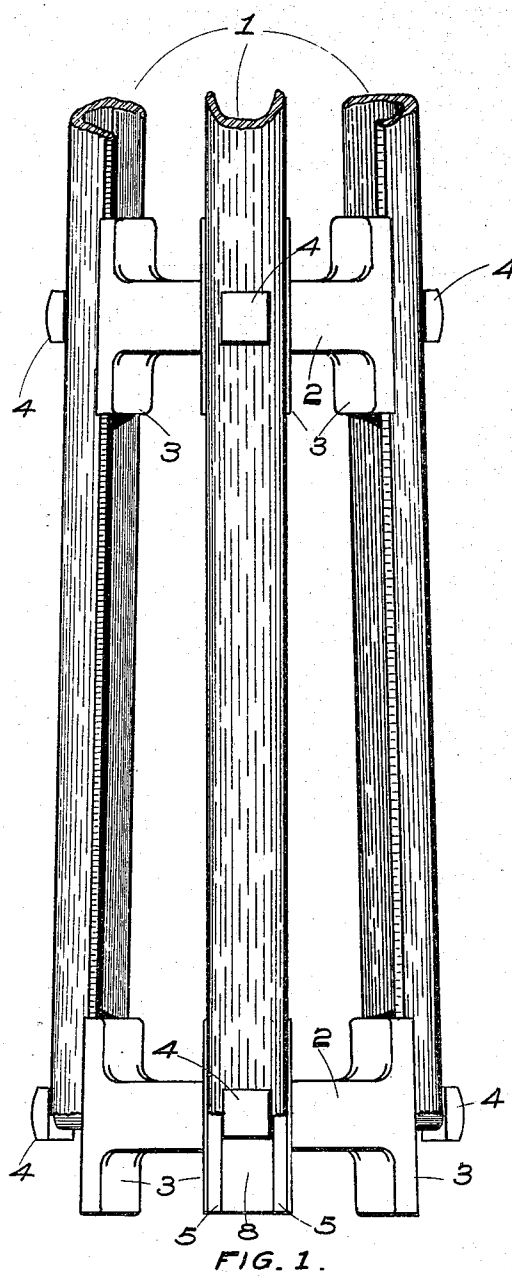


FIG. 1.

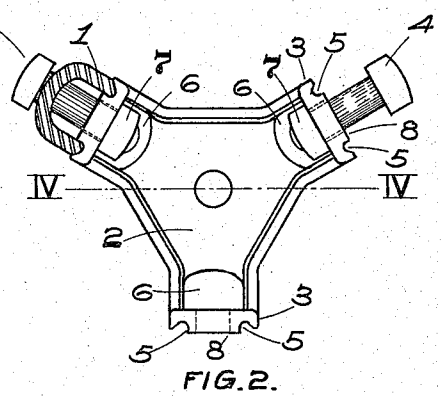


FIG. 2.

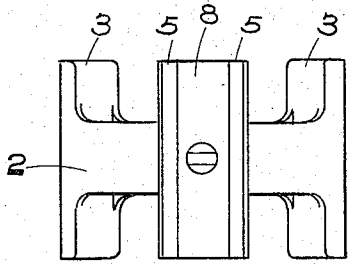


FIG. 3.

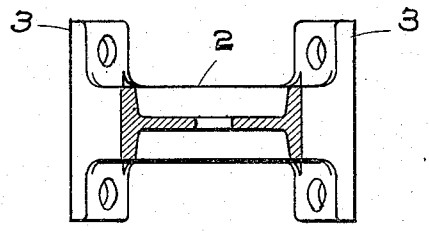


FIG. 4.

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POLE CONSTRUCTION.

1,174,501. Specification of Letters Patent. Patented Mar. 7, 1916.

Application filed January 8, 1915. Serial No. 1,212.

To all whom it may concern:

Be it known that we, HENRY M. HUGHES and JOHN A. McCARTY, citizens of the United States, residing at Franklin, in the county of Venango and State of Pennsylvania, have invented certain new and useful Improvements in Pole Construction, of which the following is a specification.

The object of our improved pole construction and the manner of combining the various elements thereof, are herein set forth with sufficient clearness to enable those skilled in the art to which it relates, to make and use the same.

The object of our improved pole construction is, to furnish a metallic pole of light but comparatively strong and rigid construction especially adapted for the lighter classes of service, such as the carrying of wires of telephone and telegraph systems.

The construction whereby we attain said objects is clearly illustrated in the drawings, the various figures of which are as follows:—

Figure 1 is an elevation of a fragment of a pole embodying our construction. Fig. 2 is a plan view of one of the transverse, or spreader members, showing in section one of the longitudinal or vertical, U-shaped members in position. Fig. 3 is an elevation of one of said spreader members. Fig. 4 is a vertical section of a spreader member on line IV—IV of Fig. 2.

The same letters of reference are applied to identical parts in all the views.

The construction here shown is substantially as follows: The vertical, or longitudinal members of the pole consist of U-shaped elements or bars, 1, 1, 1, with the opening of each thereof disposed inwardly, as clearly shown in Fig. 1. The spreader members, to which said longitudinal members are attached, consist of transversely disposed elements 2, disposed transversely to said longitudinal members, and each of said transverse or spreader members is provided with a plurality of bearings 3, 3, 3, against which said longitudinal members 1 are firmly secured by means of the bolts 4, 4, 4, which pass through said longitudinal members and engage the bearings 3, and draw said members into firm and rigid contact with each other. We wish to explicitly reiterate, however, that our construction consists of the combination of three elements, plurally employed, there being two primary elements and a third securing element; said primary elements are directly and rigidly secured together by said third element. Said primary elements consist of (1) a plurality of members which extend longitudinally of the pole, and (2) a plurality of members positioned transversely of said longitudinal elements; these two main elements are in contact with each other at their adjacent points only, inasmuch as said transverse element does not extend around, embrace or bear upon the outside of said longitudinal elements: Said third element may consist of any suitable device,—one or more at each bearing point—adapted to directly engage both of said first-mentioned two elements adjacent to the contact or bearing point thereof, whereby said two elements are rigidly secured together. The outer face of each of said bearings 3, is, preferably provided with two parallel, vertically-disposed grooves 5, 5, which receive the respective edges of the legs of said U-bars, and thus materially contribute to the strength and rigidity of the construction, by preventing any relative, lateral movement between the respective members of the pole. Each of said spreader members is provided with nut-pockets 6, 6, 6, for the reception of a nut 7, 7, 7, of the bolts 4, 4, 4. The width of said openings is slightly greater than the dimension of said nuts across the flats but of a less width than the dimension of said nuts across the corners, and are thus adapted to prevent said nuts from turning therein, when said bolts are turned to tighten them up and draw the respective members of the pole together: It is obvious that this provision greatly facilitates the assembly of the pole.

The pole may be of any length desired and any suitable number of spreaders may be employed,—the number of said spreaders being largely determined by the length of the pole and the degree of stiffness or rigidity required.

Modifications.—The construction here shown could be modified in various ways without departing from the spirit and scope of our invention as defined in the claims. In the drawings, three longitudinal U-bar members are shown, but, two, or more, may be employed if desired, by constructing suitable spreader members to which to attach them. For the purpose of securing the respective longitudinal and transverse

members together, more than one bolt may be employed in each bearing, and Fig. 4 shows a spreader adapted for the use of two bolts in each bearing. The grooves 5 could be dispensed with, thereby leaving the short intermediate tongue 8 to prevent any relative lateral movement between the respective members. It is also pointed out that an angle or a channel could be substituted for the U-section shown, and this substitution would not materially alter the form and construction of the spreader member.

We claim the following:

1. In a pole construction, a plurality of spreader-members each consisting of a horizontally or transversely-disposed element provided with a plurality of bearing points consisting of two parallel, vertically-extending grooves, in combination with a plurality of longitudinal, vertically-extending members consisting of U-bars arranged with their openings facing inwardly and the edge of each leg thereof occupying one of said grooves, respectively, and means directly engaging both of said members at said bearing points for the purpose of securing the same together.

2. A pole construction consisting of the combination of three elements plurally employed, comprising substantially U-shaped elements extending longitudinally of the pole with the legs thereof disposed inwardly, elements positioned transversely of said longitudinal elements, each of said transverse elements being provided upon its outer face with bearing points adapted for the contact of the inner, adjacent edges only of the legs of said longitudinal elements, the intervening space between the bearing points for each of said longitudinal elements being a flat, plain surface, and a third element directly engaging said other two elements at said bearing points for the purpose of securing same together.

3. A pole construction consisting of the combination of a plurality of transverse elements each being a horizontally-disposed spreader-member which is provided with a plurality of bearing points upon its outer edge or face, there being a nut-pocket formed in each of said members adjacent to each of said bearing points adapted to receive a nut and to prevent the same from turning when a bolt is screwed into the same, a nut positioned within each of said pockets, a plurality of longitudinally-disposed members arranged in contact with said spreader members at said bearing points and bolts passing through each of said longitudinally-disposed members at said bearing points and engaging said nuts for the purpose set forth.

4. A pole construction consisting of the combination of a plurality of transverse elements, each being a horizontally-disposed spreader member which is provided with a plurality of substantially flat bearing plates upon its outer edge or face, a plurality of longitudinally-disposed members each arranged to contact with a bearing plate at a plurality of points, and means holding said plates and members together and preventing lateral movement therebetween.

5. In a pole construction, the combination of a plurality of longitudinally-disposed members substantially U-shaped in cross-section, a plurality of transverse elements each being a horizontally-disposed spreader member which is provided with a plurality of bearing plates one for each longitudinally-disposed member, each of said latter members engaging a plate at a plurality of separate points said points being connected by a substantially unbroken surface of the plate, and means for securing said plates and members together.

6. In a pole construction, the combination of a plurality of transverse elements, each being a unitary horizontally-disposed spreader member which is provided with a plurality of bearing plates each having a substantially flat surface, a plurality of longitudinally-disposed members substantially U-shaped in cross-section each arranged to contact with a bearing surface at a plurality of points, and means holding said plates and members together and preventing lateral movement therebetween.

7. In a pole construction, the combination of a plurality of transverse members, each consisting of a horizontally-disposed spreader element provided with a plurality of plates each having a substantially flat bearing surface, a plurality of longitudinally-disposed members one for each plate and each being substantially U-shaped in cross-section with the opening and legs thereof disposed inwardly and the edges of said legs arranged in contact with the corresponding bearing surface, and means securing said plates and members together.

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

HENRY M. HUGHES.
JOHN A. McCARTY.

Witnesses:
EDWARD E. HUGHES,
C. F. MACKEY.

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