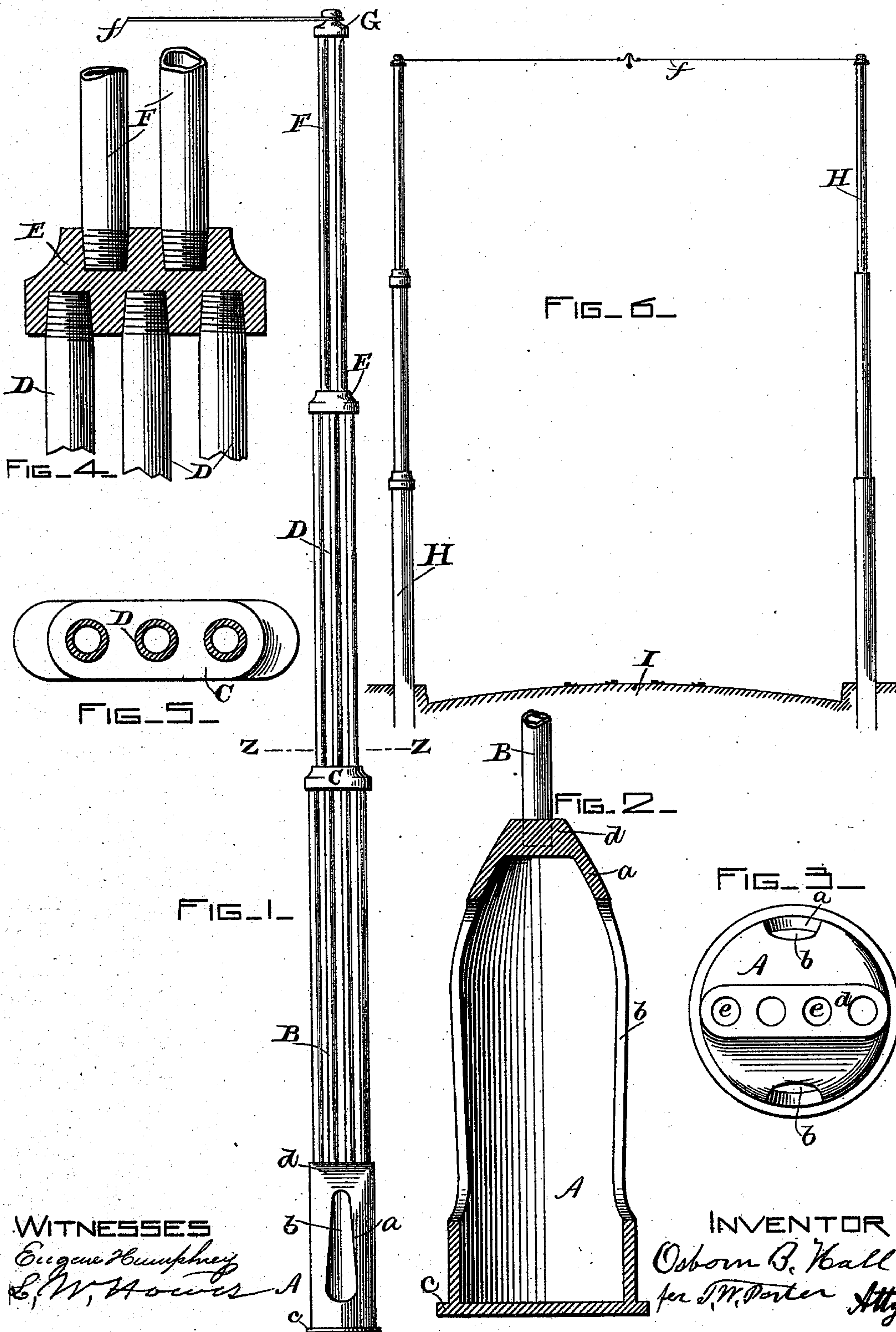


(No Model.)

O. B. HALL.
METAL POST.

No. 413,716.

Patented Oct. 29, 1889.



WITNESSES

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METAL POST.

SPECIFICATION forming part of Letters Patent No. 413,716, dated October 29, 1889.

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To all whom it may concern:

Be it known that I, OSBORN B. HALL, of Malden, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Metal Posts, which will, in connection with the accompanying drawings, be hereinafter fully described, and specifically defined in the appended claims.

In said drawings, Figure 1 is a side elevation showing my improved post. Fig. 2 is an enlarged detached sectional elevation showing a cast-iron base for my post. Fig. 3 is a top plan view of Fig. 2. Fig. 4 is an enlarged detached sectional elevation, the section being taken vertically through coupling E, and showing portions of the pipes in elevation and the method of securing the ends of all the pipes. Fig. 5 is an enlarged sectional plan view, the section being taken on line Z, Fig. 1, and the plan showing coupling C. Fig. 6 shows posts of usual construction and their usual duty.

This invention relates to the metal posts which are employed to sustain the wires that are extended across streets for the purpose of supporting the longitudinal wires known as "trolley-wires" for conducting an electric current to be utilized in propelling street-cars; and it consists in the features of novelty hereinafter pointed out, and specified in the claims.

Referring again to said drawings, A represents a cast-metal base, which is shown as formed hollow in a manner similar to the lower portion of cast-iron lamp-posts, the vertical wall *a* having preferably openings *b* cut therethrough on opposite sides in a suitable portion of its height, said wall terminating at base *c* at the lower end and in the thick portion or head *d* at the top. In said head *d* are formed the screw-threaded holes *e*, arranged in a right line across the head, as shown in Figs. 1 and 3, and in said holes are rigidly secured the correspondingly-threaded tubes B, as shown, the upper ends of said tubes being in the same manner secured in coupling C. In the upper side of said coupling C are inserted in the same manner the tubes D, which at their upper ends are secured in like manner in couplings E, as shown in Fig. 4; and in the upper side of this last

coupling are inserted the tubes F, which at their upper ends are secured in cap G, which, as shown, may be formed for securing thereto the wire *f*.

As stated, Fig. 4 shows the method of securing both ends of the pipes in their respective couplings or connections, the ends being taper-threaded, in order that they may be most rigidly secured thereby, and that the threads may be of the class known as "vanishing," in order that the strength of the tubes at the surface of the couplings may be but very slightly impaired by threading.

I have shown in the drawings four pipes in the lower group, with a reduction of one pipe per group in each succeeding group; but any desired number of pipes may be employed in each group; and I arrange the pipes in each group in a right line, so that the axes of all the pipes are in a common plane, in order that when force is applied to wire *f* in the direction as indicated the compressive resistance of those pipes shown at the left in Fig. 1 and the tensile resistance of the pipes shown at the right in the same figure will render the post very rigid and unyielding, and its resisting strength in that direction is much greater than in a direction perpendicular thereto, and as the strain is in use in but one direction the post may in all cases be so arranged in setting in the earth that the strain upon the several tubes in the groups of pipes will be in the direction indicated in Fig. 1—that is, in the direction of a line passing through the axis of the several pipes in each group.

I am aware that it is common to form supporting-posts of a number of tubes, usually arranged to form a square in cross-section, such tubes having been usually formed of several lengths or sections diminished in size in each length and coupled together by mere sleeve-couplings to render each pipe continuous in its entire length, the several pipes being held in proper relative position by a loosely-fitting yoke that received the pipes and rested upon the shoulders resulting from the diminishing of the pipes, as stated, and hence I do not broadly claim a post formed of a plurality of tubes, my invention differing from such previous con-

structions in the fact that all the ends of the tubes in each group in my post are rigidly secured in the same unyielding coupling, while the meeting ends of two groups of tubes are inserted in the same intermediate coupling, as at C and E, and hence I can produce thereby the desired decrease in strength from the lower part of the post upward by decreasing the number of tubes in the successive groups, while in said earlier posts the reduction in strength could only be effected by diminishing the size of the pipes in each length from the lower upward, and the ends of the several lengths of pipe in those earlier posts were, as above stated, coupled by a mere sleeve-coupling instead of entering the ends of all the tubes in each group in a single coupling in the manner which I employ and which produces a much stronger and more unyielding post and at a reduced expense.

It will be obvious that solid iron rods may be employed in my column instead of tubes; but I deem the latter preferable, because with the same weight of iron in a given length the tube is much stronger and more rigid than the solid rod. It will also be plain that instead of base A being of cast metal it may be of stone, having tubes B inserted in holes therein of sufficient depth and then secured by "tamping;" but such a base would be unduly heavy to transport, would be more expensive than cast metal, and would prevent the completion of the column where made, so that it could not be shipped in perfected condition, as when a metal base is employed, as the column would be necessarily inserted in the stone base after the latter had been set in the earth.

In Fig. 6 I have shown two posts H H of usual construction, one having its several sections telescoped and the other coupled together and as arranged at the sides of street I, and it is obvious that such posts are of equal resisting strength in every other direction as in the direction of the force exerted by wire *f*, and that in order to secure the requisite strength in the direction required a large surplus of strength in other directions is needlessly but unavoidably provided, which superfluous strength in directions perpendicular or at right angles to the direction of strain I avoid by arranging a plurality of smaller pipes with their axes in a common plane, as described, thereby economizing in the quantity of metal and expense of construction.

I am aware of United States Patent No. 349,049, issued September 14, 1886, to J. E. Lippincott for telegraph-pole, and I claim nothing that is therein shown, my invention differing

therefrom, among other things, in the essential particular that in said patented invention the wrought-iron tubes are "substantially continuous," and at the abutting joints of the sections thereof are secured by a sleeve-coupling, which can connect the parts of but a single tube, and hence the axes of the several lengths of each tube are of necessity coincident, and by such method of coupling it is necessary that the tubes be tied together by horizontal and oblique ties near to said abutting joints of the vertical tubes, while in my post the tubes terminate at each coupling, by which means I am enabled to have a different number of tubes in each section of my post, and, besides, by entering all the tubes in the same coupling at their respective ends I have no occasion to employ any horizontal or oblique ties either above or below the ends of the tubes, and my couplings interposed between different groups or sections of the tube positively prevent the transmission of the vibration of the tubes in one group to the tubes in the group below it.

I claim as my invention—

1. A metal post formed of tubes or rods arranged in groups, each group being but a portion of the whole height of the post, and having interposed between the meeting ends of adjacent groups a single solid coupling in which each and all of said ends are separately and independently secured, substantially as specified.
2. A metal post formed of iron tubes or rods arranged in groups, each group being but a fraction of the whole length of the post, the adjacent ends of the several tubes in each group being screw-threaded in the same coupling, and the axes of the several tubes being in a common plane, substantially as specified.
3. A metal post formed of tubes or rods arranged in groups, each group being but a fraction of the whole height of the post, the number of tubes in the several groups being diminished from the lowest upward, and the adjacent ends of the several tubes in each group being screw-threaded in the same coupling, substantially as specified.
4. A metal post formed with base A, groups of tubes, as B D F, diminished in number, in groups, one above the other, couplings, as C E, between the meeting ends of the groups, and a cap, as G, all said pipes at the respective ends of each group being rigidly secured in the same coupling or holder, substantially as specified.

OSBORN B. HALL.

Witnesses:

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EUGENE HUMPHREY.