A. E. BROWN.

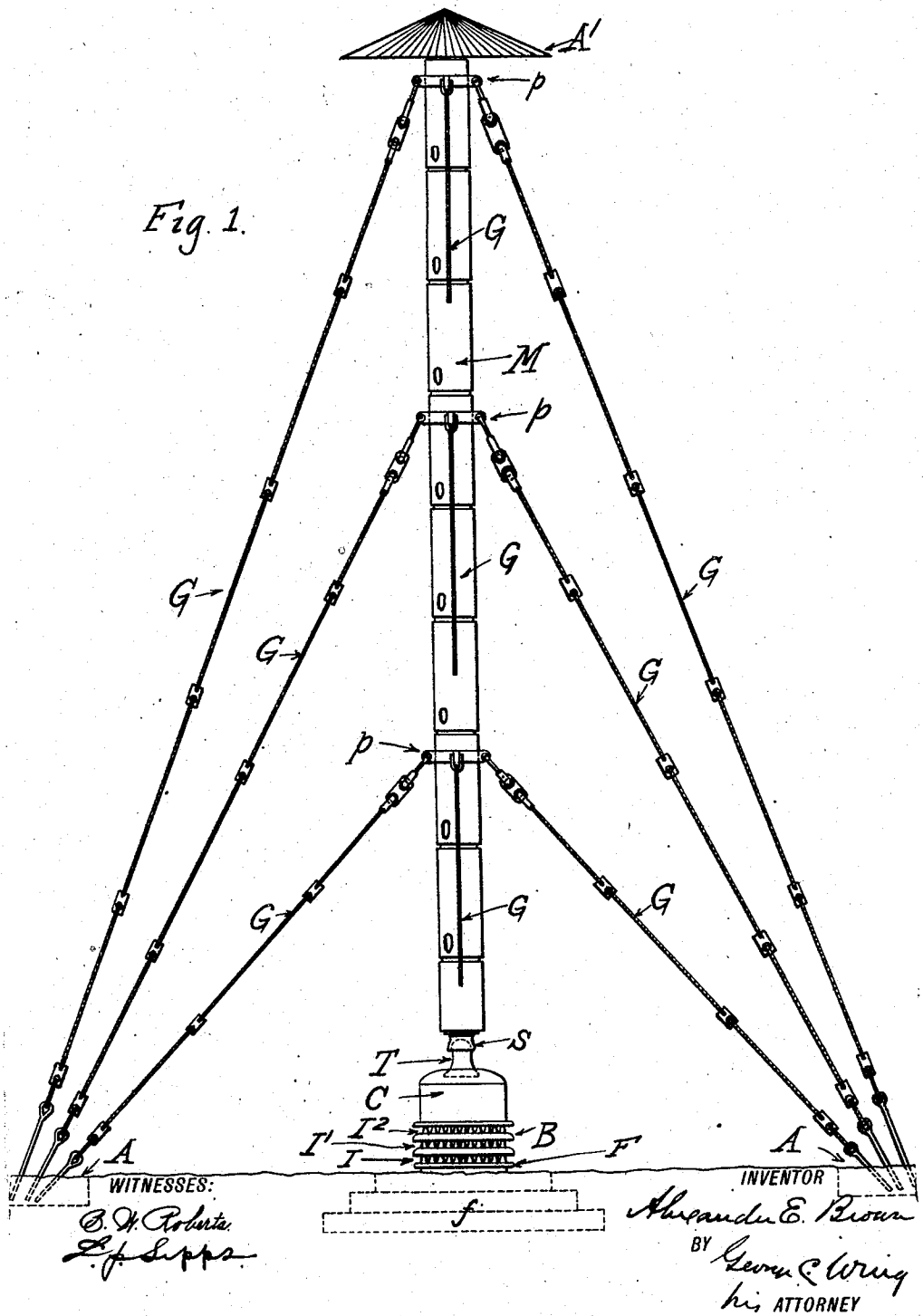
MAST FOR SPACE OR WIRELESS TELEGRAPHY.

APPLICATION FILED AUG. 3, 1906.

921,075. **Patented May 11, 1909.**

4 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:

B. W. Roberts.

L. f. Sipps.

INVENTOR

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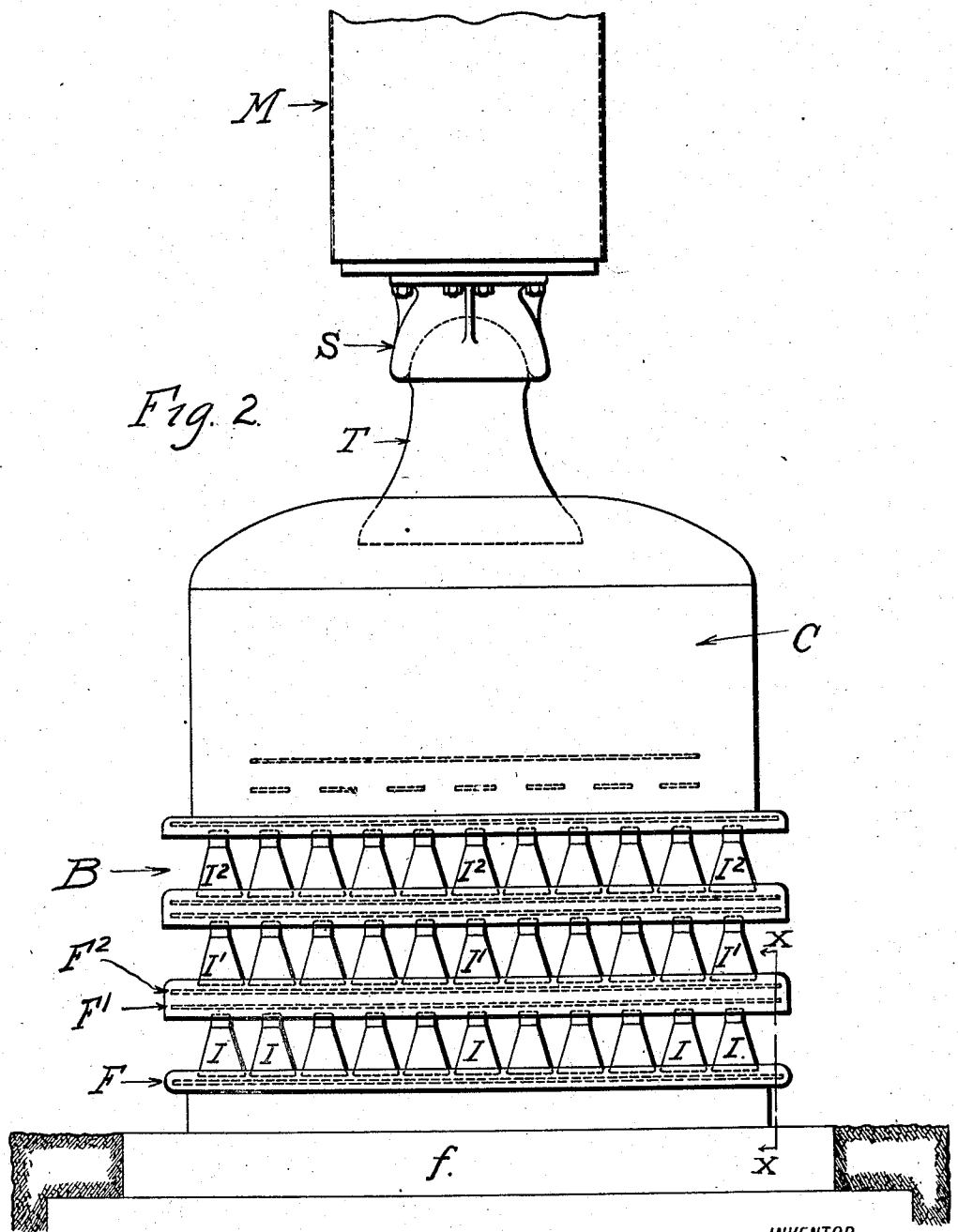
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4 SHEETS—SHEET 2.

Fig. 2.



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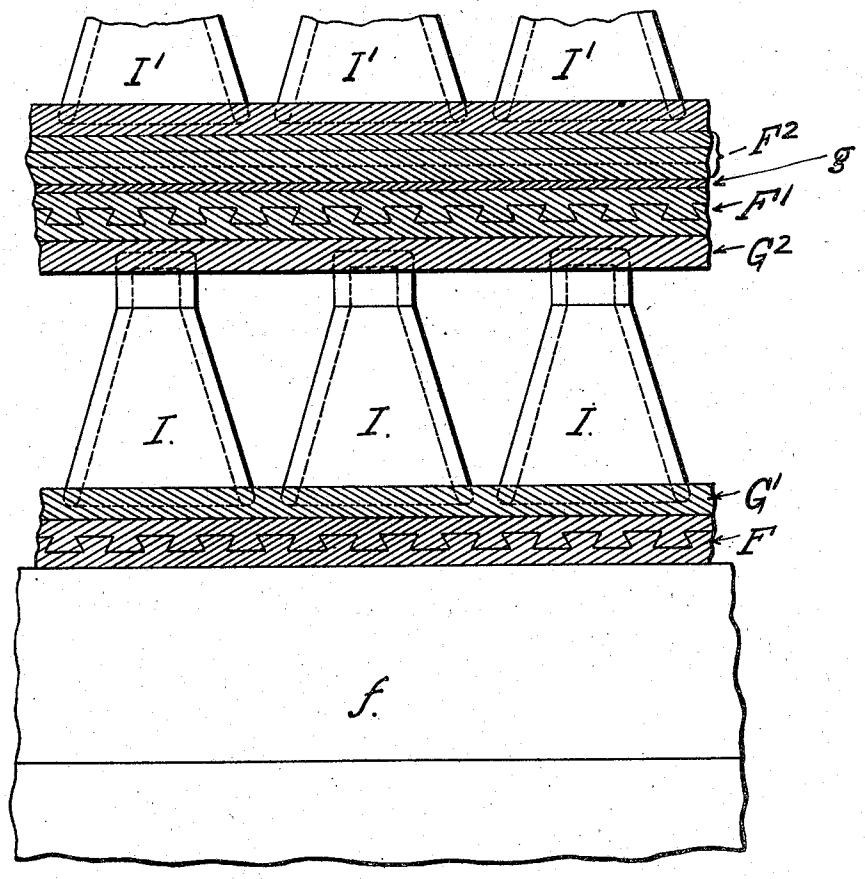
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4 SHEETS—SHEET 3.

Fig. 3.



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4 SHEETS—SHEET 4.

Fig. 4.

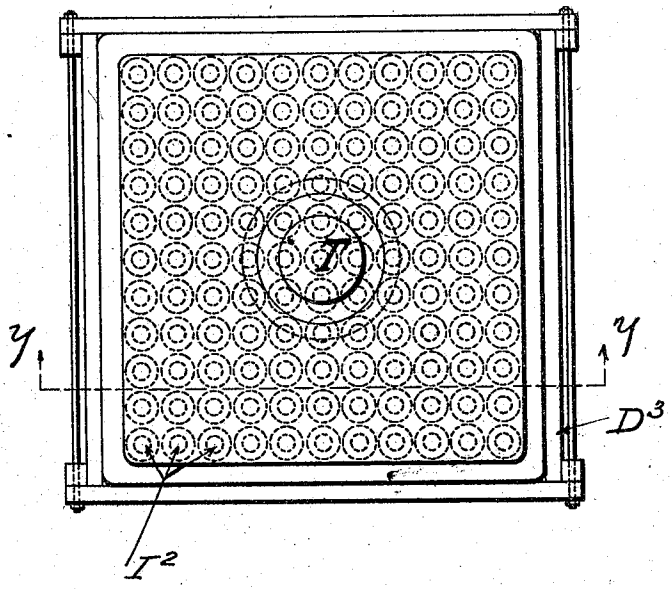
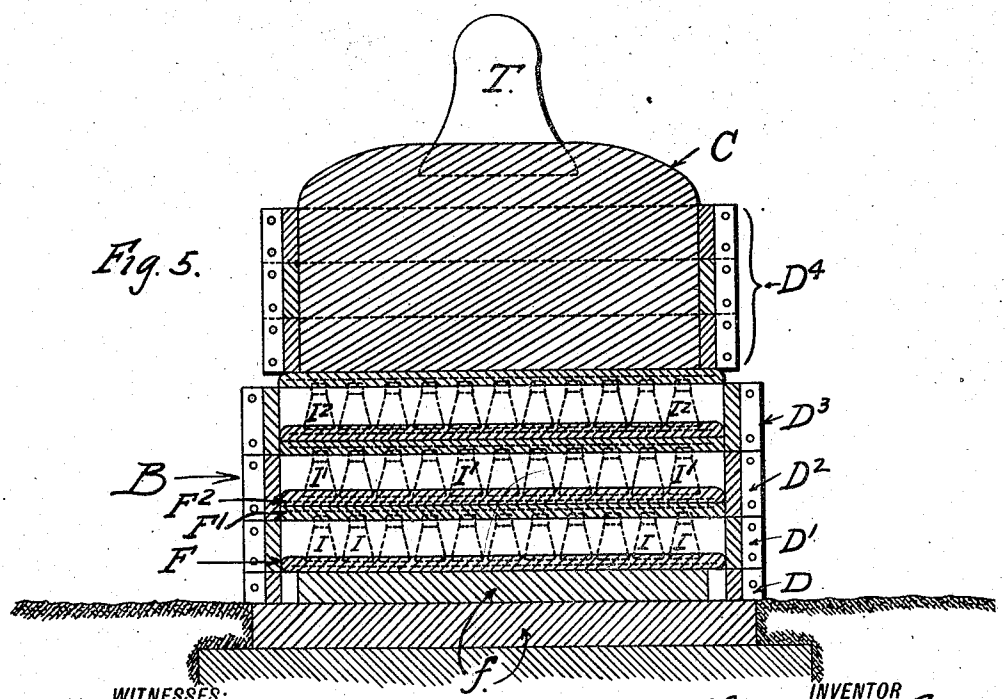


Fig. 5.



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UNITED STATES PATENT OFFICE.

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MAST FOR SPACE OR WIRELESS TELEGRAPHY.

No. 921,075. Specification of Letters Patent. Patented May 11, 1909.

Application filed August 3, 1906. Serial No. 329,099.

To all whom it may concern:

Be it known that I, ALEXANDER E. BROWN, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Mast for Space or Wireless Telegraphy; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the drawings accompanying and making a part of this application, wherein similar parts in each case are denoted by the same referential letters.

My invention relates, generally, to the class of apparatus used in space or wireless telegraphing, and, particularly, to the means employed to radiate or receive electrically produced vibrations from an elevated point above the stations.

As is well understood, prior to my present invention, the highest elevations obtainable in the connection were, for the most part, limited to wooden, or metal frame-work towers or masts, that carried and supported wire conductors between their tops and the charging plant below. From the nature of their construction such towers or masts cannot be carried to the requisite height for the fullest efficiency without prohibitive expense, and, at best, are short-lived, and subject to excessive wind-pressure.

Referring to the drawings, Figure 1 is an elevation of the mast, as a whole, with the supporting guys, at the front, shown as broken. Fig. 2 is a form of insulated base for the mast with the lowermost portion of the latter in place on the same. Fig. 3 is a vertical section of a portion of the insulated base shown in Fig. 2, through the line x x of that figure, Fig. 4 is a plan of said base, with the mast and its socket removed, showing the inclosing mold used in its construction, and, Fig. 5, is a vertical section of said base through the line y y of Fig. 4.

M is the mast proper, or the upright columnar part or element of the entire construction. While, in a broad sense, this part is not confined to a strictly cylindrical shaft, or to a shaft made up in segments or sections, as shown, I have nevertheless selected, for the purposes of this description, and specifically claim, a mast when made up of such sections, by the method or process, that is the subject of an application by me for a United States patent, filed simultaneously with this application, and bearing Serial Number 329,097. It consists of a series of hollow cylindrical segments of sheet steel, duly superimposed, one upon the other, and bolted together, until the desired height, for the mast M, is attained. At suitable intervals throughout its height, annular bands p, are preferably shown as surrounding the mast to which supporting guys G, are attached at the several quadrant points of the same. The outer ends of said guys are firmly anchored at correspondingly located points A, about the site of the mast. These guys must be thoroughly insulated from the mast, which may be done by the insertion, intermediate of their terminals, of proper electrical non-conductive material or links.

A′ represents the crown wires, or antennæ, connected with the mast M at its top and, wire, or like electrical conductors, leading to a charging plant, should be connected with the mast or shaft proper at or near its bottom. Said mast is provided centrally of its lower or butt end with a downwardly projecting socket-casting S, of suitable dimensions to fit over and upon a ball casting T, that is firmly embedded, for the purpose, in the concrete cap or top C of the insulating base B, which I am now about to explain. This base may be made up in any suitable manner that will answer, at the same time to sustain the weight of the mast M, and insulate said mast against the escape of the electric current downwardly.

As specially shown and described herein, the base B is built up, at the site for the mast, upon a firm foundation f, of masonry or other suitable supporting body. A bed of grout G′, or other hardening plastic material, is next spread above the foundation f, although, as shown in the drawings, in order to thereby obtain a firm level surface, I choose to interpose between such bed and the foundation f, a plate F of corrugated sheet-metal of the kind known as ferro-inclave, after its upper and lower surfaces have been duly coated with cement (Fig. 3). In laying the bed of grout G′, as well as the subsequent beds, it will be necessary to use surrounding molds to hold the grout in place while in its plastic condition, and until the same has hardened, as well as the sand to be interposed, as hereinafter explained. Such molds are indicated in the drawings by D, D′, D^2, D^3 and D^4, (Fig. 5). The horizontal area or dimensions of the base B must, of course be so calculated

as to permit the inclusion therein, as hereinafter explained, of such number of insulators, as together, shall be adequate to sustain the entire weight of the mast M, when vertically mounted on said base.

While the grout is in its plastic condition, within the mold D′, I embed within the same, to a depth that will insure a sufficient layer beneath to equalize any irregularities on their lower edges, an assemblage of insulators I I, preferably in the shape of hollow mounted cones, of porcelain, or other non-conductive material. These may be arranged in their places in any suitable relation to each other that will nearest distribute the weight they are to bear equally between them. As shown in the drawings (Fig. 4) they are arranged in parallel courses throughout the bed, so as, together, to form a square, each insulating member of which is equi-distant from the next adjoining member, in every case. After the first assemblage of insulators, I, have thus been seated within this bed of grout, and surrounded by the mold D′ (Fig. 5), the bed is allowed to harden, and the interspaces between the several insulators is then filled up to a short distance of their top, with sand, or like granular matter, to serve as a temporary support for the next succeeding layer of grout to be superimposed thereon.

In order to intercept and prevent any flow of moisture from such layer to the sand beneath, and thereby lessen its granular character, it will be found good practice, before the second bed of grout is made, to lay over the entire upper surface of this layer of sand, a sheet of oil-paper, or other material that is impervious to moisture, having apertures in the same to allow it to be passed over and around the tops of the insulators that project above the sand. A second layer of grout G^2, of like dimensions as the first layer G′, is now spread over the said first assemblage of insulators I, and, to secure the best results, a second layer or plate of ferro-inclave, F′, may be placed above and upon the layer of grout G^2, (Fig. 3) and, above this a thin stratum of grout *g* to cement together, and firmly fix in their relative positions, the ferro-inclave F′ and, a third layer or plate of ferro-inclave F^2 cross-wise and above said stratum *g* and the plate F′ beneath.

The several strata built up above the first tier of insulators I, as just described, securely bind the latter in place, and, at the same time, afford a firm base or foundation. In this process, the mold D^2 is applied above and around D′ and the space to be occupied by a second assemblage of insulators, I′, I′, the new bed of grout G^2 is laid in the same manner as before, and said second assemblage securely embedded therein, and a second section of the base B completed in the same manner as was the first. In like manner a third section of said base may now be added above the second, comprising an assemblage of insulators I^2 I^2 (Figs. 2 and 5), and, still further sections, until, by this means, such a degree of insulation for the base B is obtained as will be entirely adequate for the voltage to be used. Over and above the insulating portion of said base is preferably built up in a mold D^4, a heavy top or cap of concrete, to insure a uniform distribution of weight over the area of the insulating base B, in which—as before stated, is centrally embedded the ball casting T.

It will of course be understood that, except as the same are expressly and specifically claimed herein, I do not intend to limit my invention-structure, in the broader sense, to the precise details and method of making the same as illustrated and described. In that sense, for instance, the base may consist of any form of insulated construction that suffices for the functions required, or, the mast itself, instead of being made up in the particular segmental manner shown, may be in a single piece, have a non-cylindrical form, and, generally be varied in any respect from that shown that shall not be inconsistent with the purposes to be served.

What I claim and desire to secure by Letters Patent is—

A method of building up an insulating portion or section of a supporting base for a mast for space or wireless telegraphy, consisting of first spreading over a lower section of such base a bed of hardening plastic material within temporary retaining molds, next, embedding within said material, while plastic, an assemblage of insulators, and filling the interspaces between the same with sand or like granular matter to near their tops, and, thereafter, successively spreading similar material upon said sand or like granular matter above and between, said tops, and embedding similar assemblages within the same and filling their interspaces with sand or like granular matter, as before, until the insulating portion or section of said base is built up to the requisite distance, all substantially as shown and described.

ALEXANDER E. BROWN.

In the presence of—
A. M. MERRYWEATHER,
RICHARD B. SHERIDAN.