

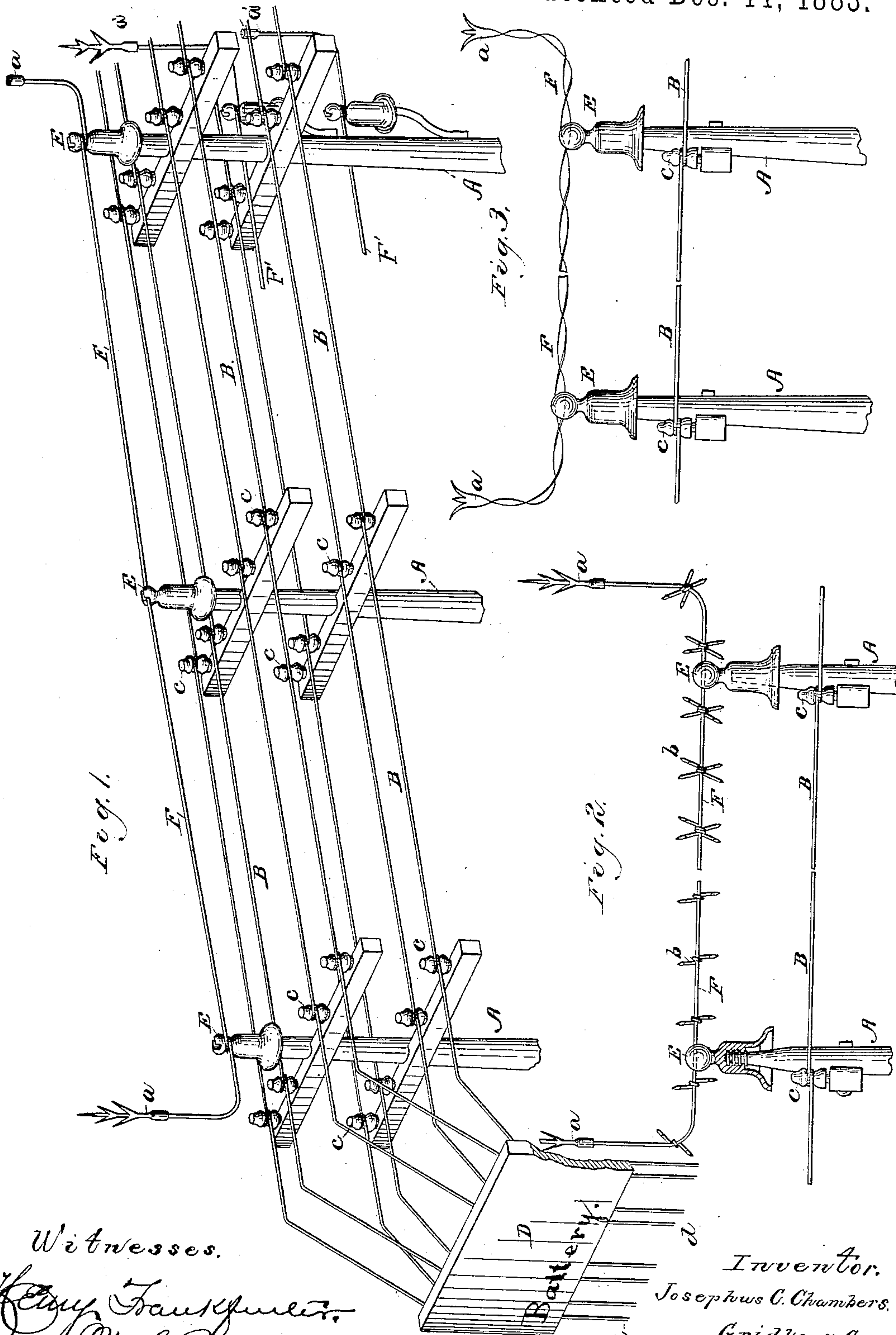
(No Model.)

J. C. CHAMBERS.

TELEGRAPH AND TELEPHONE CONDUCTOR.

No. 289,890.

Patented Dec. 11, 1883.



Witnesses.

Henry Frankfurter.
W. S. Baker.

Inventor.

Josephus C. Chambers.

per. Gridvey & Co.
his Attorneys.

UNITED STATES PATENT OFFICE.

JOSEPHUS C. CHAMBERS, OF CINCINNATI, OHIO, ASSIGNOR OF PART TO
JAMES S. VINE, OF SAME PLACE, WILLIAM A. JACKSON, OF DETROIT,
MICHIGAN, AND NELSON C. GRIDLEY, OF CHICAGO, ILLINOIS.

TELEGRAPH AND TELEPHONE CONDUCTOR.

SPECIFICATION forming part of Letters Patent No. 289,890, dated December 11, 1883.

Application filed August 23, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOSEPHUS C. CHAMBERS, of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and
5 useful Improvements in Aerial Telegraph and Telephone Conductors, of which the following, in connection with the accompanying drawings, is a specification.

It is well known that when two or more con-
10 ductors of electricity are placed in electrical proximity to each other, as in telegraph and telephone lines, every signal or sound transmitted over one by the variations of the electrical current will produce in the others in-
15 duced currents in the opposite direction, and which disturb and interfere with the use of the others for separate or distinct signals or sounds.

The object of my invention is to greatly re-
duce, if not wholly prevent, this disturbing ac-
20 tion of induction in aerial telegraph and telephone electric conductors; and my invention consists in the combination, with one or more aerial conductors insulated from the supports and connected with the batteries and ground-
25 ed in the usual manner, of one or more induction wires, rods, bands, or strips arranged upon the supports in electrical proximity to the telegraph and telephone electric conductors, and insulated from the supports from the
30 telegraph or telephone electric conductors and from the earth, and so as not to form a complete or closed circuit, substantially as herein-
after more particularly described and claimed.

The mode of carrying my invention into ef-
35 fect will be understood by reference to the accompanying drawings, in which—

Figure 1 is a perspective representation of an aerial telegraph or telephone line embody-
ing my invention, and Figs. 2 and 3 represent
40 side elevations of the same, showing different forms of induction-wires.

A represents the usual posts or supports for the telegraph or telephone electric conductors or wires B, which are insulated from said sup-
45 ports by means of glass insulators C, usually employed for that purpose.

D represents the usual battery, and *d* the electric conductors or wires leading from the battery to the ground. Upon the top of each

pole or support A is attached a glass insulator, 50
E, preferably such as shown and described in Letters Patent of the United States of America, No. 194,220, granted and issued to me on the 14th day of August, 1877.

F represents an induction wire, rod, band, 55
or strip, which is arranged upon or secured to the insulators E above and in electrical proximity to the telegraph or telephone electric conductors or wires B, and upturned, and having one or more points, *a*, at its terminal ends, 60
as shown, and is, by means of the insulators E, insulated from the posts or supports, from the telegraph or telephone electric conductors or wires, and from the ground, and so as not to form a complete or closed circuit. In long-dis- 65
tance or multiple aerial telegraph or telephone lines I securely attach to or upon the induction wire, rod, band, or strip F, at suitable inter-
vals, metallic barbs *b*, having two or more points, as shown in Fig. 2, or make the strip 70
or band F in spiral form, as shown in Fig. 3, so that the edges thereof shall present points in opposite directions, and for the purpose of more completely diffusing the induced elec-
tricity contained upon the induction-wire F, 75
and which is opposite to that contained upon the electric conductors or wires B upon said conductors or wires B, thereby greatly reduc-
ing, if not wholly preventing, the disturbing or
retarding action of the inductive influence of 80
said electric conductors or wires upon each other, and of the atmospheric electrical disturbances upon said conductors or wires. In the event that there are a large number of
telephone or telegraph electric conductors or 85
wires B arranged upon the same supports, I arrange one or more induction wires, F, not only above such electric conductors or wires, as shown in the drawings, but between two or
more or below such wires, as shown at F', and 90
in electrical proximity thereto, for the purpose aforesaid.

It is well known that if a charged conductor of electricity be brought near an uncharged conductor which is insulated and not connected 95
with the earth the charged conductor acts upon the uncharged conductor by induction and separates its polarities, and that the

charged conductor attracts the dissimilar electricity nearest to it and repels the similar electricity to the farthest points of the uncharged conductor. It is also well known that
 5 an electrical conductor, when insulated from the earth, receives its electricity by induction, and is opposite from that of the body from which it was induced, and that a conductor receiving electricity by conduction or from
 10 contact receives the same kind as contained upon the body in contact therewith; hence it will appear in the example shown that the telegraph or telephone electrical conductors B, which are connected with the earth, receive,
 15 to illustrate, negative electricity therefrom, or the same kind with which the earth may be charged, and, if brought in electrical proximity to the induction wire, rod, or band F, will induce upon the base of F positive electricity,
 20 when both the positive and negative will approach each other and become equalized, and the inductive action of the conductors or wires B will be on the induction-wire F, and thereby greatly reduce, if not wholly prevent, the dis-
 25 turbing or retarding action of induction upon the wires B.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

30 1. The combination, with a telegraph or telephone line consisting of one or more electrical conductors insulated from the supports and connected with the earth, of one or more induction wires, rods, bands, or strips ar-
 35 ranged in electrical proximity to the telegraph or telephone electrical conductors, and insulated from the supports, from the tele-

graph or telephone electrical conductors, and from the earth, and having its terminal ends disconnected, so as not to form a complete or
 40 closed circuit, substantially as and for the purpose specified.

2. The combination, with an aerial telegraph or telephone line consisting of one or more electrical conductors insulated from the
 45 supports and connected with the earth, of one or more induction wires, rods, bands, or strips arranged in electrical proximity to the telegraph or telephone electrical conductors, and insulated from the supports, from the tele-
 50 graph or telephone electrical conductors, and from the earth, and having its terminal ends turned upward and pointed, substantially as shown and described, and for the purpose
 55 specified.

3. The combination, with an aerial telegraph or telephone line consisting of one or more electrical conductors insulated from the supports and connected with the earth, of one or more induction wires, rods, bands, or strips
 60 arranged in electrical proximity to the telegraph or telephone electrical conductors, and insulated from the supports, from the telegraph or telephone electrical conductors, and from the earth, and having its terminal ends
 65 turned upward and pointed, and provided at intervals between its terminal ends with electrical conducting barbs or points pointing in opposite directions, substantially as shown and described, and for the purpose specified.

JOSEPHUS C. CHAMBERS.

Witnesses:

W. S. BAKER,
 M. M. GRIDLEY.