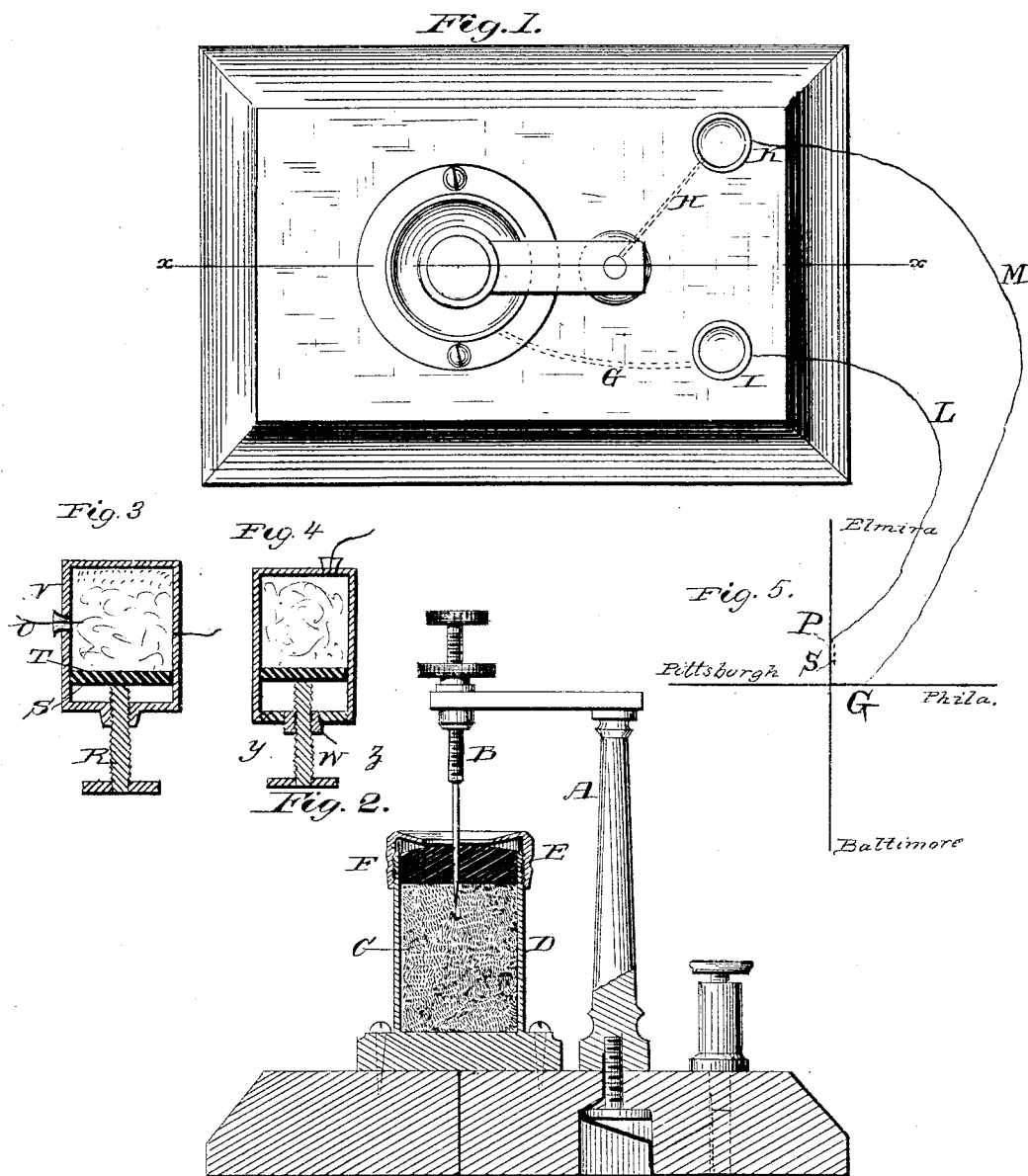


W. GILLETT.
Resistances for Adapting Common Lines to Telephone
Transmission.

No. 214.248.

Patented April 15, 1879.



Witnesses.
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UNITED STATES PATENT OFFICE.

WEBSTER GILLETT, OF YPSILANTI, MICHIGAN.

IMPROVEMENT IN RESISTANCES FOR ADAPTING COMMON LINES TO TELEPHONE TRANSMISSION.

Specification forming part of Letters Patent No. **214,248**, dated April 15, 1879; application filed November 27, 1878.

To all whom it may concern:

Be it known that I, WEBSTER GILLETT, of Ypsilanti, Washtenaw county, in the State of Michigan, have invented an Improvement in Adjustable Conveyers or Shunts for Electric Telegraphs; and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a top view of my improved apparatus or machine. Fig. 2 is a lateral view, partly in vertical section. Figs. 3 and 4 are modifications of certain parts. Fig. 5 represents two telegraph-lines, for illustrating the operations on a telegraph-line.

My invention relates to an improvement in telegraphs, for the purpose of using the line or a section of the line for two purposes at the same time—that is, for purposes requiring dynamic electric influence or intensity, and also for purposes requiring quantitative electric influence without interference or interruption to either operation.

My invention consists of an adjustable needle, with point inserted into powdered carbon, plumbago, or other similar poor conductor, in combination with an adjustable disk or diaphragm for pressing the powder more or less at pleasure; and in other improvements which will be fully described.

In Fig. 1 is a standard, A, with an adjustable needle, B, inserted into carbon powder C, contained in a cylinder or chamber, D, having an adjustable cap, E, by which the rubber disk F can be pressed down more or less on the charcoal powder, and make the same more or less compact. The rubber disk F completely insulates the point of the needle, so that the current must pass through the needle and carbon powder.

One wire-connection is seen at G, and the other at H, Figs. 1 and 2. By this connection the electric influence must pass from the needle through the carbon powder, the rubber F being a non-conductor.

Now, for illustration, let us suppose a continuous line of telegraph to run from the point marked "Baltimore" to the point marked "Elmira," in Fig. 5 of the drawings; and suppose another independent line to connect the

point marked "Pittsburgh" with the point marked "Philadelphia," in the same figure. By means of the shunt these two separate lines may be connected by attaching the wire M to the Pittsburg and Philadelphia line at the point G, and then connecting the wire L with the point P in the line from Elmira to Baltimore, and we may telegraph from Philadelphia to Elmira, using part of the two independent and separate lines. Or suppose there is a break in the line from Elmira to Baltimore at the point P S, as noted in dotted lines; then, connecting the wire M to the telegraph-line one side of this break and the wire L at the other side of the break, the shunt will bridge over this break in the line, and we can telegraph from Elmira to Baltimore, the current passing through the shunt while the break remains open.

In the case where the two lines are connected by the shunt, if we desire to use the instrument for acoustic purposes, this operation will not interfere with the ordinary operation of either or both lines of telegraph, because the charcoal powder and needle-point of the shunt furnish only a poor conductor of electric influence, and there will be no interruption or interference with either the talking or the general telegraphing with all three processes going on at the same time. Thus by the use of two or more shunts or loops we can multiply the connections of different points, and talk over different portions of the same line at the same time; or any section of a line may be used for talking by connecting one wire of the shunt or loop with the main line and the other wire with the ground. But if we use a section of a line between two terminal points, we employ two shunts or loops, one at each end of the section so used, and we connect both with the ground.

Figs. 3 and 4 show modifications of the cylinder or chamber for holding carbon and compressing the same.

The adjusting-screw R, Fig. 3, works against the metallic disk or follower S, which is in contact with a rubber disk, T, thus being isolated from the carbon, which may be more or less compressed, at pleasure.

The wire U has a rubber insulator, V, while

the other wire is connected with the cylinder, so the electric influence must pass through the carbon or other equivalent.

Figs. 3 and 4 are modifications of cylinders or carbon-chambers. In Fig. 4 the adjusting-screw W works in a metallic collar, Y, which is insulated by a rubber ring, Z, and one of the wires may be connected with the collar Y, thus requiring the electric influence to pass through the collar and screw in reaching the carbon. In these Figs. 3 and 4 the adjustability depends in part on the compression of the carbon, by which, between the carbon and needle, the points of contact are increased or diminished, according to the greater or less pressure.

By the above-described instrument and mode of operation I am able to employ dynamic electric influence, and also quantitative electric influence, simultaneously on the same telegraph-line without interruption or interference with either operation; and my conveyer may be applied in various ways not herein described.

I do not broadly claim the use of carbon in combination with electric telegraphs; but

What I claim is—

1. The cylinder or chamber D, containing carbon powder C, in combination with the rubber disk F and adjustable cap E, for the purpose of compressing the powder more or less, and thus increasing or diminishing the compactness of the powder, and the consequent contact with the needle, as set forth.

2. An adjustable conveyer, having the chamber D filled with carbon, and also a rubber disk, F, and adjustable cap E, in combination with a telegraph-line having a break therein, substantially as and for the purposes set forth.

The above specification of said invention signed and witnessed at Washington this 15th day of November, A. D. 1878.

WEBSTER GILLET.

Witnesses:

GEO. F. GRAHAM,
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