(No Model.) 2 Sheets—Sheet 1.

D. G. BARNARD.

AUTOMATIC ADJUSTABLE DOUBLE TELEPHONE RECEIVER.

No. 303,553. Patented Aug. 12, 1884.

Fig. 1

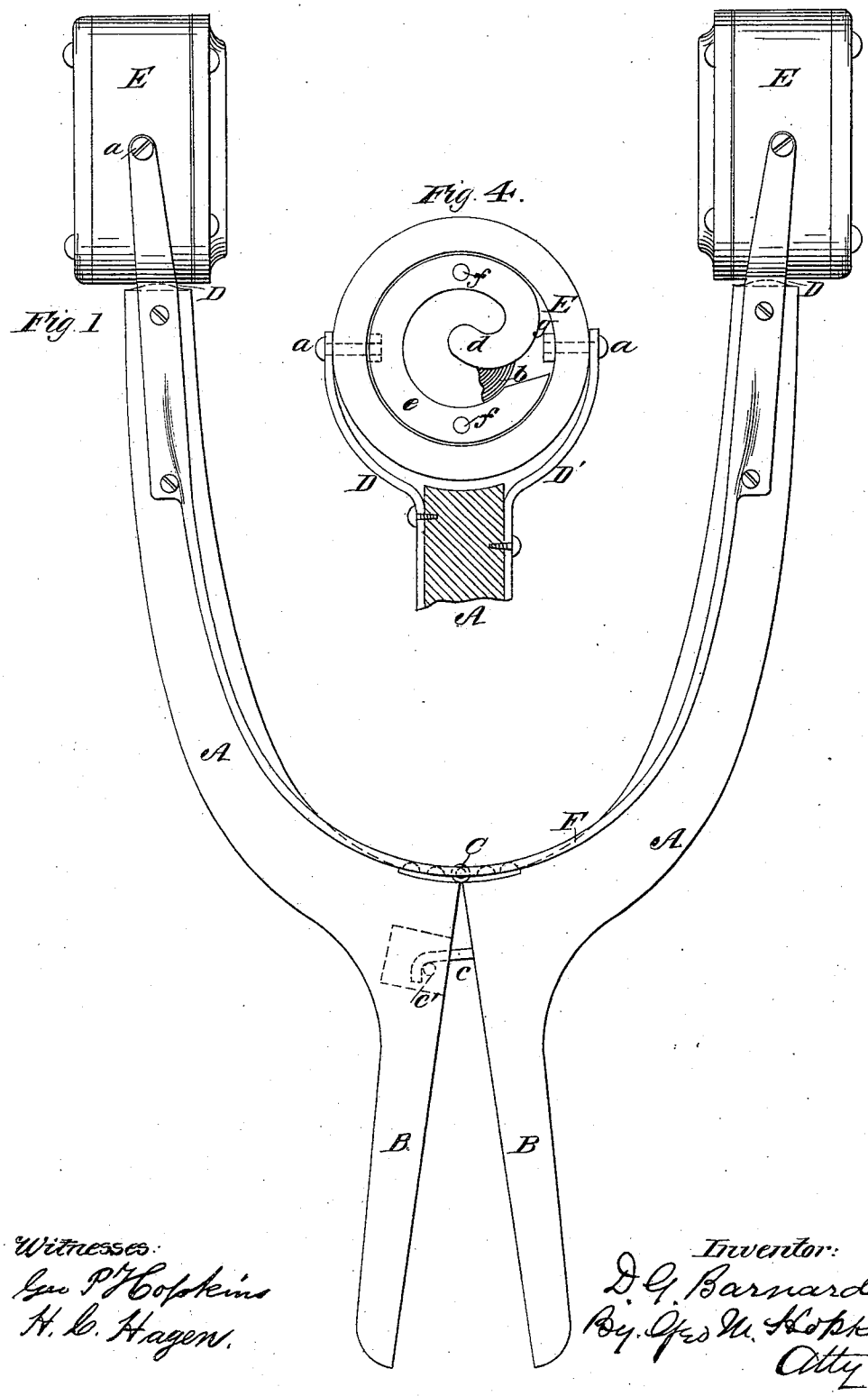

Fig. 4.

Witnesses:
Geo. P. Hopkins
H. C. Hagen.

Inventor:
D. G. Barnard.
By Geo. M. Hopkins.
Atty

(No Model.) 2 Sheets—Sheet 2.

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No. 303,553. Patented Aug. 12, 1884.

Fig. 2.

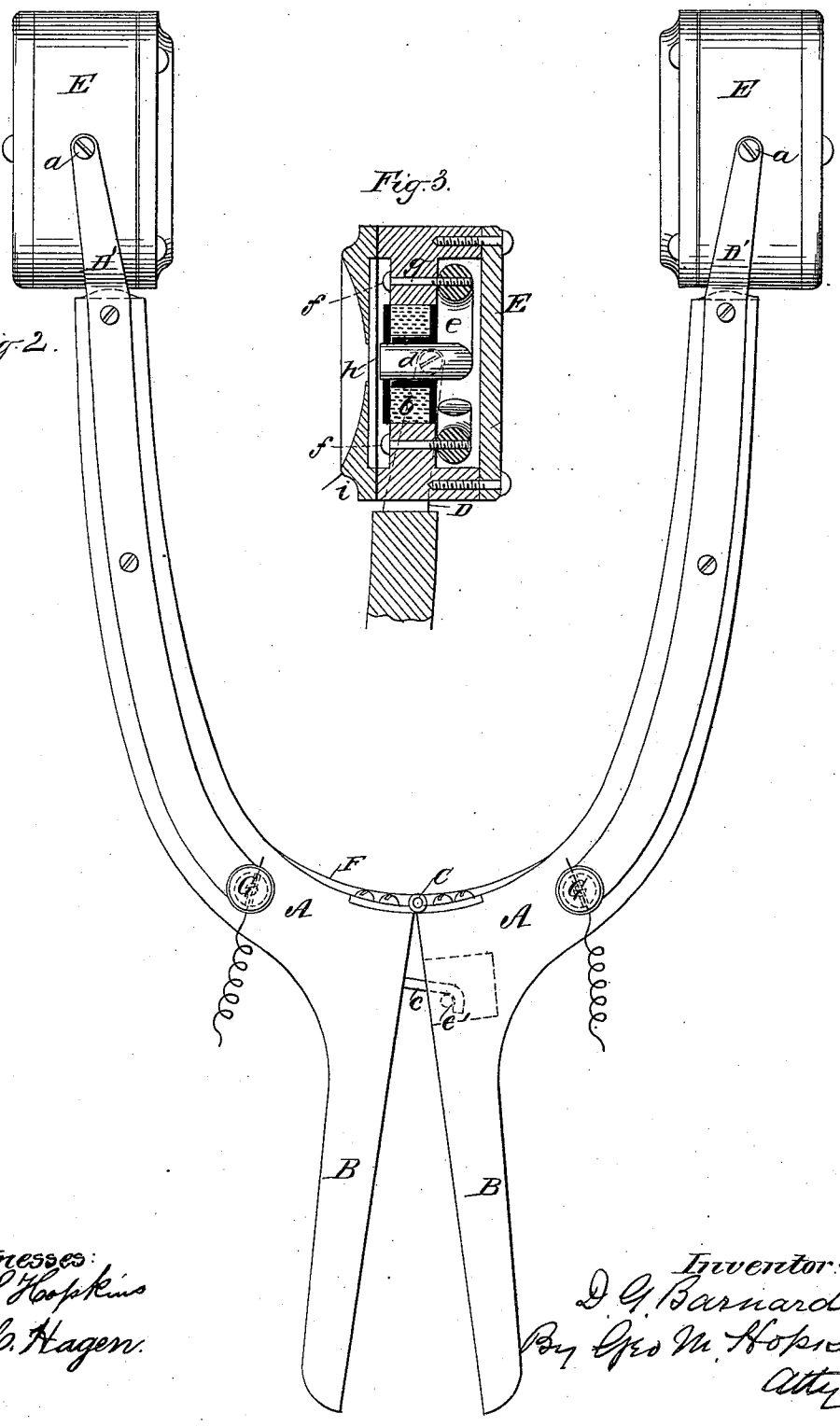

Fig. 3.

Witnesses:
Geo. P. Hopkins
H. G. Hagen.

Inventor:
D. G. Barnard
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UNITED STATES PATENT OFFICE.

DANIEL G. BARNARD, OF WINSLOW, NEW JERSEY, ASSIGNOR OF THREE-FOURTHS TO WILLIAM C. HAY, HELEN H. BERNADON, AND ANNIE D. SQUIRE, ALL OF SAME PLACE, AND AUGUSTA H. COCHRAN AND GEORGE COCHRAN, OF PHILADELPHIA, PENNSYLVANIA.

AUTOMATIC ADJUSTABLE DOUBLE TELEPHONE-RECEIVER.

SPECIFICATION forming part of Letters Patent No. 303,553, dated August 12, 1884.

Application filed May 1, 1884. (No model.)

To all whom it may concern:

Be it known that I, DANIEL G. BARNARD, residing in Winslow, in the county of Camden and State of New Jersey, have invented a new and useful Improvement in Automatic Adjustable Double Telephone-Receivers, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof.

The object of my invention is to improve the double telephone-receiver for which Letters Patent No. 280,116 were granted to me June 26, 1883.

My invention consists in the combination, with two diaphragm-cells, of a holder composed of two arms hinged together and pivoted to the diaphragm-cells, and drawn toward each other by a bow-spring attached to the free ends of the said arms, and forming an electrical connection between the terminals of the two receiver-bobbins.

Figure 1 is a side elevation of my improved automatic adjustable double telephone-receiver. Fig. 2 is a side elevation of the reverse side of my improved telephone-receiver. Fig. 3 is a transverse section of the diaphragm-cell and of the parts contained therein. Fig. 4 is a rear view of the diaphragm-cell with the cap removed to show the receiver-magnet.

Similar letters of reference indicate like parts in the different figures of the drawings.

Two levers, A, curved sufficiently to receive between them the head of the user of the telephone, are provided with handles B, and are connected together at the upper ends of the handles by a hinge, C,

To the free ends of each curved lever A are secured two curved metallic arms, D D′, which are apertured at their free ends to receive the pivotal screws *a*, which pass through the arms D D′ into diametrically-opposite sides of the diaphragm-cells E, forming pivots upon which the cells may swing to adapt themselves to the ears of the user. The screws *a* are connected with the terminals of the telephone-bobbin *b*, and serve to conduct the telephone-current through the sides of the diaphragm-cell. The ends of the arms D of the opposite levers A are connected with each other by a wire bow-spring, F, which conforms to the general curve of the levers A, and draws them toward each other, and at the same time serves as an electrical conductor between the bobbins of the two diaphragm-cells. The ends of the arms D, which are secured to the levers A, are prolonged toward the hinge C, and provided at their extremities with binding-posts G, for receiving the usual telephone-conductor. When the diaphragm-cells E are drawn toward each other by the spring F, the handles B are separated, and to limit the movement of the levers A a hook, *c*, extends from one handle into a mortise in the other in position to engage a pin, *c′*, passing transversely through the mortise when the handles are separated. The diaphragm-cells E each contains a bobbin, *b*, surrounding the end of a permanent magnet, *d*, which is curved in a spiral, *e*, to bring it within the compass of the cell. The magnet *d* is clamped by screws *f* against the fillet *g*, formed in the diaphragm-cell. The diaphragm-cell contains the usual diaphragm, *h*, which is opposed to the magnet, and is partly covered by the apertured cap *i*.

The automatic adjustable telephone-receiver is applied to the ears by separating the diaphragm-cells E by pressing on the handles B, then placing the head between them, then releasing the handles, so that the bow-spring F may draw the diaphragm-cells against the ears. When thus applied, both ears are used, and all extraneous sounds are effectively shut out. By this construction the volume of sound is greatly increased, and faint sounds are rendered more effective.

My improved automatic adjustable receiver facilitates telephonic communication in noisy places, and permits of receiving telephonic messages by currents too weak to operate the ordinary receiver effectively. It is therefore especially adapted to long-distance telephony, where the currents arriving at the receiving end of the telephone-line are but a fraction of the current sent out by the transmitter.

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

1. The combination, with the curved levers A, hinged to each other and provided with handles B, of the bow-spring F, for pressing the free ends of the levers together, as described.

2. The combination, with the hinged levers A, of diaphragm-cells E, arms D, bow-spring F, secured to the said arms and forming an electrical connection between the same, and arms D′, prolonged toward the hinge of the levers A, and provided with binding-posts G, as specified.

DANIEL G. BARNARD.

Witnesses:
GEO. BARTALOTT,
GEO. P. BARTALOTT.