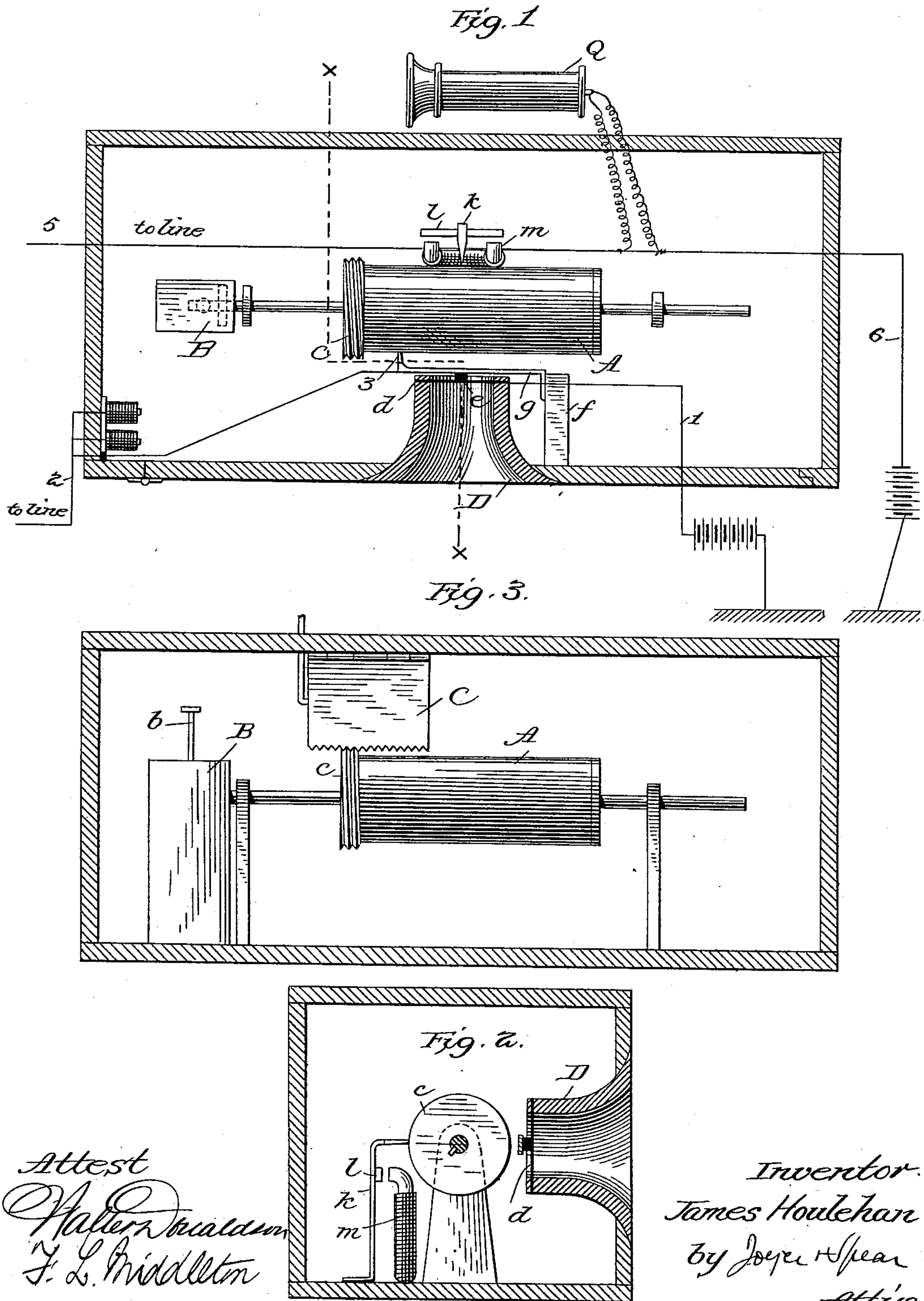


(No Model.)

J. HOULEHAN.
TELEPHONY.

No. 335,522.

Patented Feb. 2, 1886.



Attest
Walter Baldwin
F. L. Middleton

Inventor
James Houlehan
by *Joyce Spear*
Attys.

UNITED STATES PATENT OFFICE.

JAMES HOULEHAN, OF TOLEDO, OHIO, ASSIGNOR OF ONE-HALF TO WILLIAM A. BUNTON, OF BOSTON, MASSACHUSETTS, AND SEVEN-SIXTEENTHS TO J. S. BARKER AND E. E. DWIGHT, OF TOLEDO, OHIO.

TELEPHONY.

SPECIFICATION forming part of Letters Patent No. 335,522, dated February 2, 1886.

Application filed May 27, 1885. Serial No. 166,876. (No model.)

To all whom it may concern:

Be it known that I, JAMES HOULEHAN, of Toledo, in the county of Lucas and State of Ohio, have invented a new and useful Improvement in Telephones; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates to telephones; and it consists in specially combining a telephone with a phonograph, whereby the oral communications over a telephone-line may be automatically recorded.

In the accompanying drawings, Figure 1 is a side view of the apparatus, partly in section. Fig. 2 is a transverse section on line *xx* of Fig. 1. Fig. 3 is a plan view of the apparatus.

In these drawings, A represents a phonograph-cylinder with its shaft in ordinary bearings. B indicates the clock-work mechanism for giving uniform rotary motion to the cylinder, and C the threaded block against which the threaded head *c* of the cylinder works. A plunger-rod, *b*, operates a brake for stopping and starting the clock-work. On one side of the cylinder is a telephone mouth-piece, D, with an insulated diaphragm, *d*, and carbon button *e*, fixed thereto. On a post, *f*, is a steel spring, *g*, in the circuit 1 2. The end of the spring is a point, 3, of glass or other insulating material, this point bearing on the tin-foil of the cylinder, and making the record there in the ordinary manner. The spring lies across and near to the diaphragm, and a carbon telephone-button, *e e*, is interposed between the spring and diaphragm. The spring acts through the point upon the foil of the cylinder as an ordinary phonograph when sound-waves strike the diaphragm through the mouth-piece. At the same time telephonic impulses are caused to pass through the carbon button, which is under the varied pressure

of the sound-waves, and these impulses are sent to line 2. Thus the communications are sent to the distant correspondent, and at the same time are recorded on the phonograph. The receiving-instrument is on another circuit, 5 6. An insulated spring, *k*, without being on the cylinder, is mounted on the side of the cylinder opposite the one last described. It carries an armature, *l*, opposite the poles of an electro-magnet, *m*, the coil of which is in the circuit 5 6, and thereby the point of the spring is caused to make a record of the message received from the correspondent. An ordinary telephonic receiver, Q, is in the same circuit, and the message may at the same time be heard and recorded. With this instrument the phonograph contains a record of both of the messages sent and received. The parts are shown as inclosed in a box, P, but may be placed in any convenient position.

I claim as my invention—

The cylinder of a phonograph, the mouth-piece, diaphragm *d*, carbon button *e*, and spring *g*, having the insulating-point, the spring and diaphragm being in telephone-circuit 1 and 2, and arranged on one side of the cylinder, in combination with the spring K, having a point bearing on the opposite side of the cylinder, and an armature, *l*, the electro-magnet *m*, the coil of which is in circuit of the receiving-telephone Q, and transmitter of the distant station, all substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES HOULEHAN.

Witnesses:

W. C. DUVALL,

F. L. MIDDLETON.