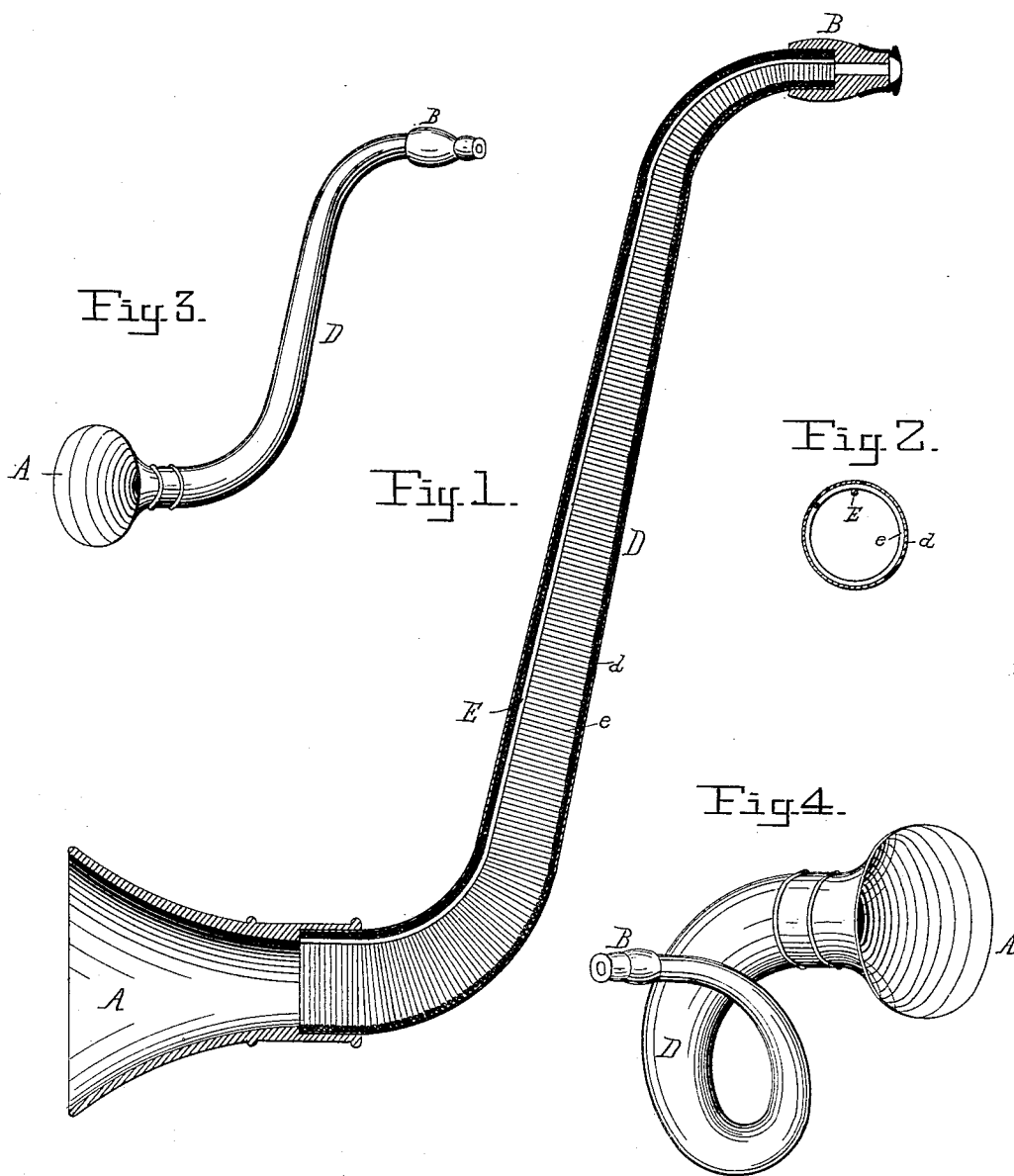


(No Model.)

J. E. LEE.
EAR TRUMPET.

No. 392,040.

Patented Oct. 30, 1888.



Witnesses:

E. J. Griswold.
Geo. A. Crane.

Inventor:

J. Ellwood Lee.
By his Attorneys.
Horsman and Horsman.

UNITED STATES PATENT OFFICE.

J. ELLWOOD LEE, OF CONSHOHOCKEN, PENNSYLVANIA, ASSIGNOR TO THE
J. ELLWOOD LEE COMPANY, OF SAME PLACE.

EAR-TRUMPET.

SPECIFICATION forming part of Letters Patent No. 392,040, dated October 30, 1888.

Application filed May 1, 1888. Serial No. 272,429. (No model.)

To all whom it may concern:

Be it known that I, J. ELLWOOD LEE, a citizen of the United States, residing in Conshohocken, Montgomery county, Pennsylvania, have invented certain Improvements in Ear-
Trumpets, of which the following is a specification.

The main object of my invention is to so construct an ear-trumpet or speaking-tube for the use of persons with defective hearing that the trumpet may be caused to assume and retain almost any shape which may be desired, and can be conveniently carried in the pocket.

A further object of my invention is to insure the fitting of the ear-piece in the ear of the person using the trumpet.

In the accompanying drawings, Figure 1 is a longitudinal section of an ear-trumpet embodying my improvements. Fig. 2 is a transverse section through the tubular body of the trumpet, and Figs. 3 and 4 are perspective views showing ear-trumpets in different shapes.

Ear-trumpets consist of three essential parts—the mouth-piece A, ear-piece B, and tubular body D. In some cases these three parts are made rigid—say of hard rubber or of sheet metal. In other cases the trumpets have been made with flexible bodies.

The main feature of my present invention is an improvement on trumpets having flexible bodies. The flexibility of the tubular body is obtained, as heretofore, by making it of a braided or woven textile covering, *d*, around an internal coil of wire, *e*, the opposite ends of this tube being suitably secured by cement or otherwise to the mouth of the ear-pieces. An ear-trumpet thus made, while convenient for being carried in the pocket, is inconvenient for use, for the reason that owing to its flexibility it has to be held by both hands. To remedy this I make the tube pliable, but so that it will retain any shape to which it may be bent. For this purpose I provide a wire or

wires, *E*, of soft copper or other similar material, within the tubular body and secured to the opposite ends of the tube, and preferably, also, to most, if not all, of the coils *e* by soldering or otherwise. This soft-copper wire is of such a size as not to seriously interfere with the capacity of the tube to carry the sound-waves, and yet is of such a size as to retain the tube in whatever shape it may be bent to. In Fig. 3, for instance, the tube is shown as curved to the shape usually used for rigid trumpets, while the trumpet shown in Fig. 4 is of a different capacity, and is shown as curled up almost to a coil.

To insure the fitting of the ear-piece in the ear of the user of the trumpet, I provide the ear-piece with a soft-rubber tip, *t*, of such a character that when put into the ear it will act as a gasket to make a tight joint there.

I claim as my invention—

1. An ear-trumpet having its tubular body pliable, but capable of retaining the shape to which it is bent.

2. An ear-trumpet having its tubular body flexible and containing a wire or wires of soft copper or similar material running through and secured to the body, as and for the purpose set forth.

3. An ear-trumpet having its tubular body flexible and of coiled wire with a textile covering, and a wire of soft copper extending through the body and secured to the coils, substantially as described.

4. An ear-trumpet having a soft-rubber tip on the ear-piece, as and for the purpose set forth.

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

J. ELLWOOD LEE.

Witnesses:

HUBERT HOWSON,
HARRY SMITH.