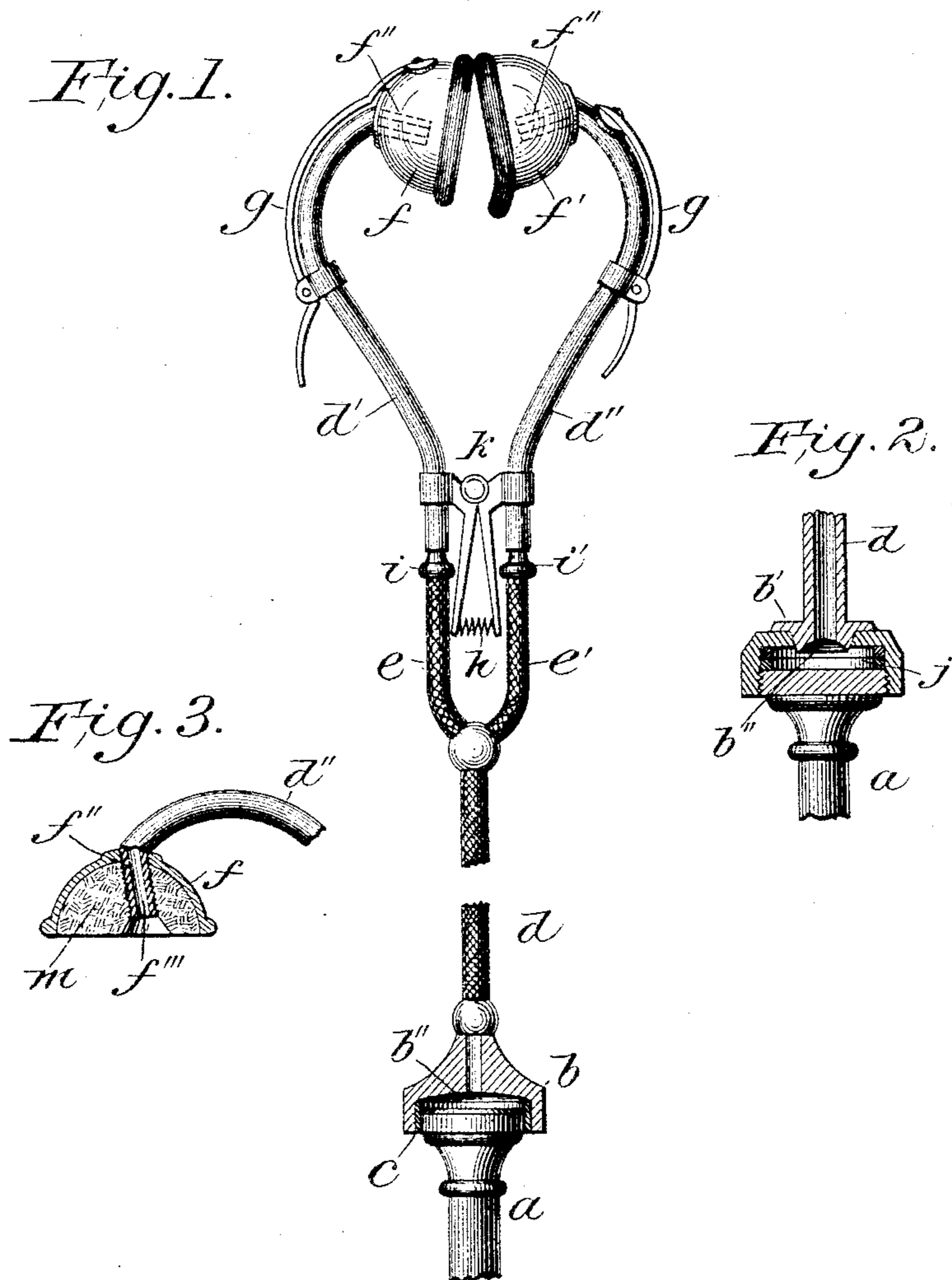


(No Model.)

G. V. BENJAMIN.
TELEPHONIC AUDITORY APPARATUS.

No. 448,627.

Patented Mar. 24, 1891.



Witnesses:
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UNITED STATES PATENT OFFICE.

GEORGE VAUGHN BENJAMIN, OF ITHACA, NEW YORK.

TELEPHONIC AUDITORY APPARATUS.

SPECIFICATION forming part of Letters Patent No. 448,627, dated March 24, 1891.

Application filed June 20, 1889. Serial No. 315,027. (No model.)

To all whom it may concern:

Be it known that I, GEORGE VAUGHN BENJAMIN, a citizen of the United States, residing at Ithaca, Tompkins county, New York, have
5 invented an Improved Instrument or Structure for Connecting the Ear of the User of a Telephone with the Telephone, of which the following is a specification, reference being had to the accompanying drawings.

10 My invention consists of, first, a cap made to fit the head about the ear of the one hearing the message of a telephone, the cap being made of rubber hardened to a cartilaginous consistency, so that it has considerable rigid-
15 ity with a degree of flexibility; second, this cap is connected either by one tube from one ear-cap or, as indicated in the drawings, by two caps and two tubes, which connect each ear to a common tube before reaching the
20 telephone, this final tube being connected to a cover placed over the auditory-aperture of the telephone; third, a packing or a sound-deadening material is employed with the cap, which may be and by use will be extended un-
25 der the edges of the ear-cap, packing against the head and deadening sounds entering to the ear in the space about the outside and the inside of the edges of the cap; fourth, a valve that opens either into the cap or into the tube
30 near the cap; fifth, of the adjustable screw-furnished portion of the tube, by which the end of the tube is adjusted on the threads in the cap to bring the aural end of the tube into the vestibule of but not in contact with the
35 ear itself, because all ends of tubes impacted in the ear become covered with the secretions of the ear and liable to communicate disease, (hence I adjust the end of the tube in the cap, as just stated,) and, sixth, such con-
40 necting means with the telephone as to receive its transmitted sounds. By these means it will be seen that my main feature of invention is a cap about the ear and a tube partially or wholly flexible with an adjustment
45 to a telephone, and the secondary adjuncts of packing material, valve to admit external sounds, and means of adjustment of the end of the sound-conveying tube in the vestibule of the ear. There is no design nor adapta-
50 tion sought of any invention applicable to an ear-trumpet, stethoscope, or to any appliance

for deafness or like uses of parts somewhat similar; nor do I claim to be the inventor of any tube connected with a telephone which has its aural end placed snugly or impacted
55 in the ear.

My invention will be apparent as I further describe it.

Figure 1 is an elevation of my instrument placed in a perpendicular position. Fig. 2 is
60 a sectional view of the attachment of my instrument to a Bell telephone, and Fig. 3 is a sectional view of the ear-cap.

In the figures, *a* is the auditory end of a telephone, such as Bell's, and *b* is my cover
65 over its auditory-aperture, fitted by a rubber jacket *c* between the telephone and the cover. A flexible tube *d* is attached to this cover and reaches the center piece, where the tubes *d'* *d''* join the tube *d*. I need not describe the com-
70 mon parts of these tubes, such as their springs, levers, hinges, &c., but simply say that they are metallic parts which hold the tubes and ear-caps to the head. The caps are some-
75 what elastic, and the tubes adjustable in the caps by screw-threads on the ear ends of these tubes, as and for the reasons stated, since even the usual aperture of a Bell telephone becomes foul by especially the indiscriminate
80 use of many persons. Therefore I make the contact with the head about the whole ear and not in contact with the ear, and the edges of the cap, whether covered by packing material or not, are shaped to fit the head and
85 especially project into the cavity below the ear, and a valve *g* is placed either on the cap or tube, as indicated, for admitting external sounds. All else is believed to be apparent. My claims are limited to my exact invention.

I claim—

90 1. In an instrument made to be used between the ear and a telephone, a cap of cartilaginous consistency and with a shape adapted to fit the head about the ear, in combination with a tube connecting the cap and
95 the telephone, as described.

2. In a telephonic structure used between the ear and a telephone, the cap provided with a sound preventing and deadening material packed about the edges of the cap and
100 excluding external sounds, as described.

3. In a telephonic structure used between

the ear and a telephone, the valve *g*, adjusted on the cap or on the tube near the cap, as described.

4. In a structure used between the ear and a telephone, the cap and ear end of the tube provided with screw-threads, whereby adjustment is made of the aural end of the tube into but not in contact with the ear, as described.

5. In an instrument for telephonic hearing used between the ear and a telephone, the

combination of the ear-cap and of its tube-extension into but not in contact with the ear, and the packing about the edges of the cap and the sound-conveying tube extending to the telephone, there being a connection of the tube with the telephone, as described.

GEORGE VAUGHN BENJAMIN.

Witnesses:

SAMUEL J. PARKER,
O. P. HYDE.