

(No Model.)

T. A. WATSON.
Telephone Switches.

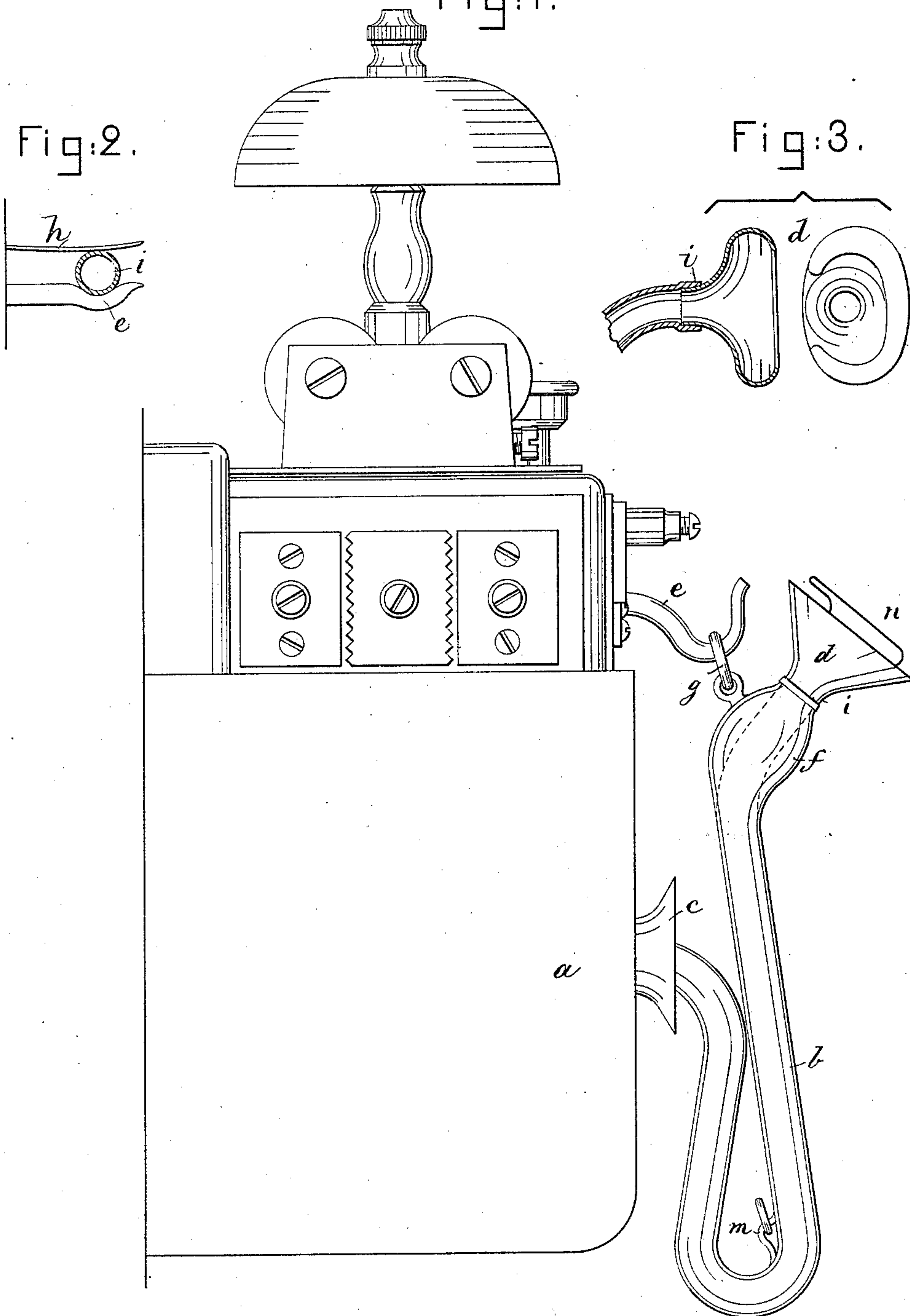
No. 232,159.

Patented Sept. 14, 1880.

Fig:1.

Fig:2.

Fig:3.



Witnesses.

Jos. P. Livermore.

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by Crosby & Gregory Attys

UNITED STATES PATENT OFFICE

THOMAS A. WATSON, OF EVERETT, MASSACHUSETTS.

TELEPHONE-SWITCH.

SPECIFICATION forming part of Letters Patent No. 232,159, dated September 14, 1880.

Application filed April 12, 1880. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. WATSON, of Everett, county of Middlesex, State of Massachusetts, have invented an Improvement in Telephones, of which the following description, in connection with the accompanying drawings, is a specification.

My invention relates to telephones, and is intended as an improvement on the telephone invented by Alexander Graham Bell, for which Letters Patent of the United States were issued January 30, 1877, to which reference may be had. In that patent a fixed or stationary telephone was shown provided with a flexible tube or sound-conductor having at its end a suitable mouth-piece to be placed to the ear or mouth of the operator, as desired.

My invention consists in adapting the said telephone to operate the usual automatic switch now operated by the weight of a movable telephone; also, in adapting the mouth-piece of the flexible tube to be readily fastened to the ear of the operator, thus allowing a free use of the hands and relieving the said operator from the present necessity of holding the heavy hand-telephone at his ear. This is especially advantageous where a continued conversation is to be maintained while using independent receiving and transmitting instruments, or where, as at the central office, an operator must be in nearly or quite continual communication with the subscribers.

Figure 1 is a side view of a telephonic apparatus embodying my invention; Fig. 2, a modification thereof, and Fig. 3 views of the mouth-piece of the tube detached in section and front elevation.

The telephone *a*, intended to be attached to the wall of the room or maintained in any desired fixed position, is provided with a flexible tube or sound-conductor, *b*, which may issue from or take the place of the usual fixed mouth-piece *c*.

The tube *b* is provided at its free extremity with the usual flaring mouth-piece *d*, which serves both to receive sound from a speaker or to be placed to the ear to impart sound to a listener, the sound being conducted in either case with scarcely diminished intensity through the tube *b* to or from the usual tele-

phone-diaphragm at the inside of the mouth-piece *c*.

In order that a fixed telephone constructed with a flexible sound-conducting tube may operate the usual automatic switch *e* without necessitating any change in the latter, I provide a sufficient weight at the mouth-piece *d* of the said tube, which may conveniently be placed in an enlargement, *f*, at the end of the said tube *b* adjoining the mouth-piece, and should have a suitable ring or eye, *g*, to enable it to be hung on to operate the hooked switch-piece *e*.

A weight applied in this manner serves as a convenient handle for the mouth-piece *d*, preventing the pressure of the hand from collapsing and closing the tube *b*, and I find that a weight suitable for operating the switch is not sufficient to fatigue the operator using the telephone.

Fig. 2 shows another method of operating the switch without necessitating any material alteration in its construction or the arrangement of its contact-pieces. In this instance the hook *e* is bent into a slightly different shape, and a slightly yielding elastic abutting-piece, *h*, is attached to the frame-work sustaining the other parts of the switch, so that when the collar *i* of the mouth-piece *d* is thrust between the pieces *e h* it will press the former down, as is usually done by the weight of the telephone.

It will be readily understood that by leading the flexible tube *b* where it first leaves the fixed portion of the apparatus out over the movable switch-piece *e*, which may be properly shaped to receive it, the said switch-piece may be operated by merely dropping the tube and letting its entire weight, with an added weight at its free end, if necessary, rest on or hang from the said switch-piece; or a similar effect would be produced with the apparatus of Fig. 1 if the hook *e* were connected by a cord to the proper point on the bight of the tube *b*—as, for instance, at *m*. In this case, of course, the ring *g* would be omitted, and the mouth-piece *d* merely dropped when the operator had finished using the telephone.

In some cases it is necessary or desirable to retain the telephone at the ear for a considerable length of time, and this may be accom-

plished with the aid of the flexible tube *b* without vitiating the usefulness thereof for speaking purposes or necessitating any additional mouth-piece therefor.

5 As shown in Fig. 1, the mouth-piece of the telephone is provided with a wire, *n*, suitable to slip over the ear and retain the said mouth-piece close to the ear.

When intended to be supported on the ear
10 it is desirable to have the weight as small as possible, and the weight at *f* should be omitted, the switch, if any be needed, being then operated as in Fig. 2.

In Fig. 3 the mouth-piece is shown as made
15 of thin sheet metal or other suitable material and shaped to embrace and be held on the ear, after the manner of an ordinary ear-muff.

I claim—

20 1. A telephonic apparatus comprising an automatic switch, a fixed telephone, a hearing or speaking tube therefor, adapted to be suspended when not in use from the operating-lever of said switch, and a mechanical device,

such as a spring or weight, for increasing the pressure on said lever when the tube is suspended therefrom, substantially as described. 25

2. A fixed telephone and flexible sound-conducting tube therefor, provided with a weighted mouth-piece and means to suspend the same from the usual automatic switch when the telephone is not in use, substantially as and for 30 the purpose described.

3. A telephone and flexible sound-conducting tube connected therewith, provided with a mouth-piece adapted to be used for speaking, 35 and also to be fastened and supported upon the ear of the listener, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 40

THOMAS A. WATSON.

Witnesses:

JOS. P. LIVERMORE,
N. E. C. WHITNEY.