

(No Model.)

C. T. LORING & G. W. PIERCE.

TELEPHONE.

No. 271,878.

Patented Feb. 6, 1883.

Fig. 1.

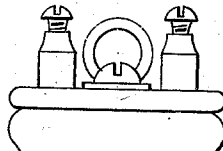


Fig. 2.

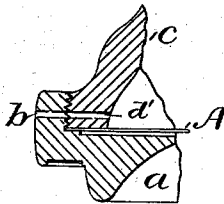
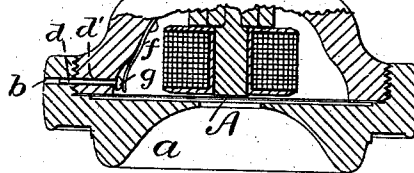
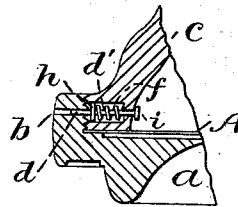


Fig. 3.



Attest,
E. H. M. Hazel.
D. E. Richards.

Inventors,
Charles T. Loring-
Geo. Willis Pierce
by their attorney
Thos. S. Lockwood

UNITED STATES PATENT OFFICE.

CHARLES T. LORING AND GEORGE WILLIS PIERCE, OF BOSTON, MASSACHUSETTS, ASSIGNORS TO THE AMERICAN BELL TELEPHONE COMPANY, OF SAME PLACE.

TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 271,878, dated February 6, 1883.

Application filed October 5, 1882. (No model.)

To all whom it may concern:

Be it known that we, CHAS. T. LORING and GEO. WILLIS PIERCE, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Telephones, of which the following is a specification.

This invention relates to telephones which employ a perforated cover to guard or surround the diaphragm or sound-wave-receiving surface. The telephone cover or ear-piece is usually provided with an internal screw to fit an external screw formed on the end of the telephone carrying the sound-wave-receiving surface. As the former is simply screwed onto the latter, much trouble and annoyance are experienced by curious persons unscrewing the ear-piece, as the inclosed parts have been lost or defaced.

In telephones employing a vibrating plate or diaphragm it often becomes necessary to unscrew or screw down the ear-piece away from or nearer to the diaphragm in order to prevent the same from rattling, or to adjust it to any tension, as, if the ear-piece is screwed on too hard, it prevents the diaphragm from vibrating.

Our invention has for its object to secure the ear-piece to the body of the telephone in such a manner as to prevent its removal therefrom by the ordinary user, and also to permanently secure the diaphragm in a position to avoid rattling or undue tension. We prefer to secure the ear-piece to the body of the telephone by automatic spring-locking devices, though we do not confine ourselves to them, as we may employ any ordinary locking device.

In the drawings, Figure 1 represents a sectional view of a hand-telephone embodying our invention. Fig. 2 illustrates the method of adjusting and drilling the parts to secure a proper tension of the diaphragm, and Fig. 3 shows a modification of the locking device.

c represents the shell or casing of a hand-telephone of the form known as "Bell's."

a is the cover or ear-piece screwed onto the end of the shell *c*.

A is the vibrating plate or diaphragm, held in place at its periphery between the ends of

the shell *c* and the cover *a*. This is the usual way of securing the ear-piece or cover to the body of the telephone.

To adjust the diaphragm to a proper tension, the cover is slightly turned in the proper direction to the right or left, as the case may require, and as no provision is made to positively hold the cover to its adjustment, it becomes necessary to frequently readjust the same; and, further, the adjustment is not only broken, but the diaphragm and interior parts of the instrument are subjected to injury by the removal of the cover by the persons using them.

Fig. 1 shows a form of our invention consisting of a pin, *d*, located in a hole, *d'*, formed in the shell *c* of the telephone, and susceptible of sliding back and forth therein. A head, *g*, is formed on the inner end of the pin *d*, against which the free end of a spring, *f*, presses, forcing the pin outwardly into the hole *b*, formed in the periphery of the cover *a*.

To arrange the locking device so as to secure a perfect adjustment of the diaphragm, in order that the sound-waves may be unimpeded, the cover *a* is screwed onto and pressing the diaphragm against the end of the case *c*. The telephone being connected to line, tests are made as to whether the cover is screwed on too tight or loose—in other words, whether the diaphragm rattles or is strained too tightly. An adjustment having been made, a hole is drilled through the rim of the cover *a* into the end of the telephone-case *c*, as shown in Fig. 2. The pin *d* being inserted in the hole *d'* of the shell *c* from the inner side, the spring *f* is fastened in position to press the pin outward, as shown in Fig. 1. When the cover *a* is screwed onto the shell *c*, the pin *d* is pressed inwardly by any suitable device to allow the cover *a* to be screwed fully on, when the pin will be pressed by the spring outwardly into the hole *b* in the cover and prevent the same from being unscrewed.

To remove the cover *a*, a needle or small wire is inserted into the hole *b* and pressed inwardly to a sufficient distance to permit the cover *a* to be turned off.

Fig. 3 shows another form of locking device, in which the hole *d* in the case *c* is enlarged at its external end to receive a spiral spring, *f*, which forces the pin *d* outward, as shown, 5 by reason of the collar or abutment *h* on the pin. A head, *i*, is fitted to the inner end of the pin to prevent its being forced out by the spring when the cover *a* is removed.

There are many ways of accomplishing the 10 locking of the cover *a* to the shell *c*, it being desirable in all cases to disclose as little outside suggestion of a lock as possible.

We claim as our invention—

1. In a telephone, the combination, with the 15 shell or body, the ear-piece screwed thereon, and the diaphragm, of the concealed pin or locking device for preventing change of the adjustment of said cover, substantially as described.

20 2. The combination, with the body of the telephone and the cover or ear-piece, of the spring-pin located within said body and entering a hole in the rim of said cover, substantially as described.

3. The combination, with the shell or body 25 of the telephone and the cover screwed thereon, said parts supporting the diaphragm between them, of a concealed pin located within said body or shell, actuated by a spring to enter a hole in the rim of said cover and hold 30 the said parts in the desired position relative to each other, substantially as described.

4. The combination, in a telephone, of the shell or body, the cover or ear-piece screwed 35 thereon, the diaphragm, the locking-pin, and the spring, substantially as described.

In testimony whereof we have signed our names to this specification, in the presence of two subscribing witnesses, this 17th day of July, 1882.

CHARLES T. LORING.
GEO. WILLIS PIERCE.

Witnesses:

C. H. M. HAZEL,
PHILIP S. STONE.