

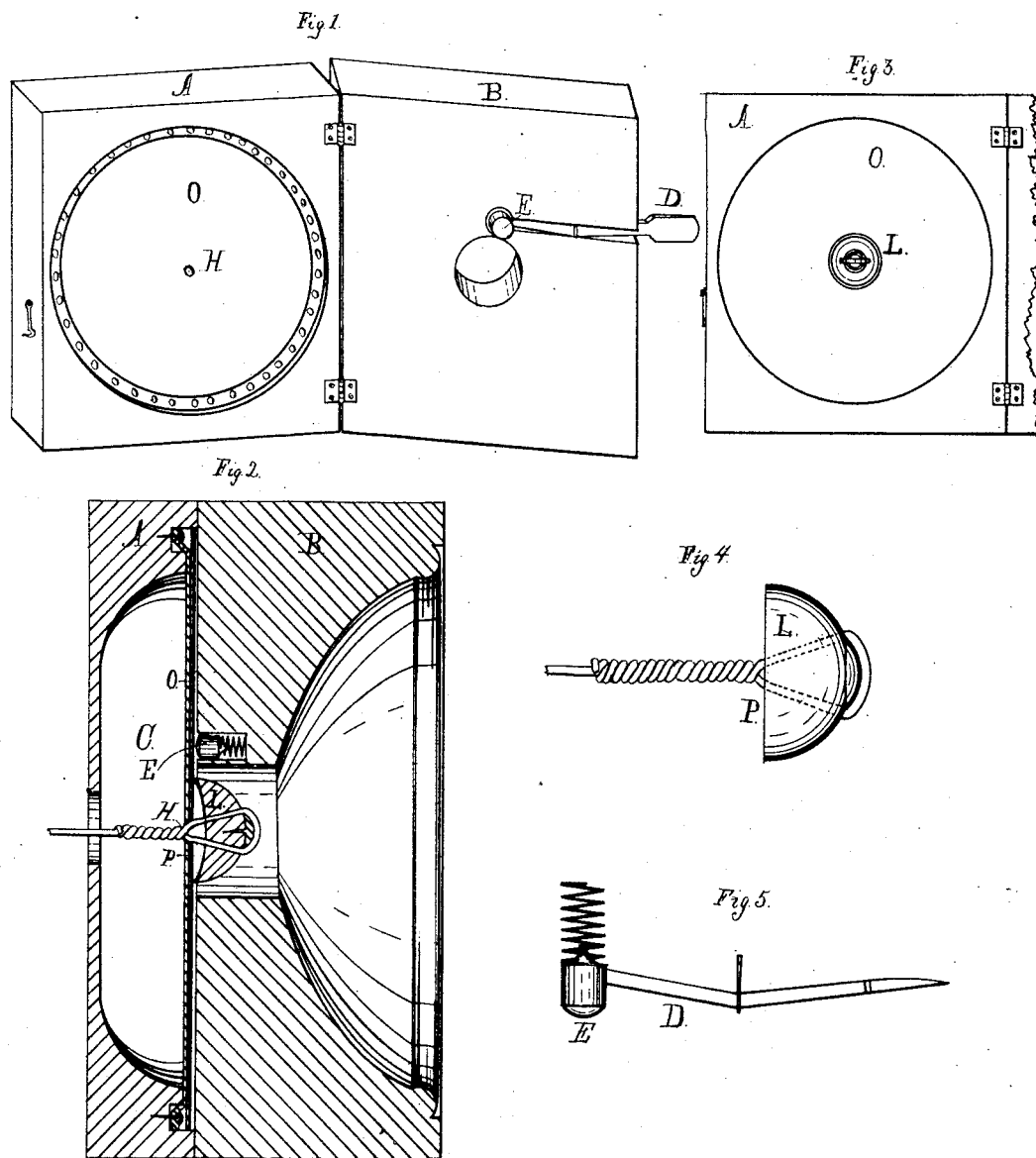
(Model.)

W. D. G. QUIGLEY.

ACOUSTIC TELEPHONE.

No. 261,174.

Patented July 18, 1882.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM D. G. QUIGLEY, OF ROCKFORD, MICHIGAN.

ACOUSTIC TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 261,174, dated July 18, 1882.

Application filed September 22, 1881. (Specimens.)

To all whom it may concern:

Be it known that I, WILLIAM D. G. QUIGLEY, of Rockford, Kent county, Michigan, have invented a new and useful Telephone, of which the following is a specification.

My invention relates to improvements in acoustic telephones, or those not operated by the aid of electricity; and the objects of my improvements are, first, to secure a casing composed of two single blocks of wood; second, a substantial and durable, though delicate and sensitive, diaphragm; third, a simple automatic call, operating directly upon the diaphragm; and, fourth, an improved button for engaging the transmitting-wire to the instrument. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a view of the inner parts of my invention, showing the manner of attaching the diaphragm to the wooden casing. Fig. 2 is a vertical sectional view of my invention when folded ready for use. Fig. 3 is a surface view of the compound diaphragm, with wire and button in place. Fig. 4 is a view of my improved button with wire attached, and Fig. 5 is a detached view of my improved device for calling.

Similar letters refer to similar parts throughout the several views.

The case of my invention consists of two substantial parts, each composed of a single piece or block of wood, connected together by hinges or otherwise, and folded together when in readiness for use. One of these parts contains the diaphragm O, while the other contains the automatic call and sound channel, and serves to conduct the sound to and from the diaphragm.

To prepare the case A for the diaphragm, a large cavity or chamber, C, should be cut in a block of wood of suitable size, and upon the inner side of the block, around the cavity, the wood should be cut away somewhat and a shoulder formed to receive the diaphragm, so that it will not touch against the opposite part of the instrument when the two parts are folded together. To aid in holding the diaphragm securely and firmly, a recess should be made in the shoulder at its outer circumference, so that when nailed on the diaphragm will bind

somewhat over its inner edge. In this way the strain is removed to a degree from the tacks or nails used in fastening the diaphragm in place.

The diaphragm O may be simple or compound. To prepare it a green or raw cow or ox hide should be taken and fleshed, and the hair also should be removed. While thus raw the skin is soft and pliable. While in this condition it should be smoothly drawn over the chamber C in the case and nailed securely at the outer edges of the shoulder, so that it will be smoothly drawn over the chamber. This is shown in Fig. 1. As the skin becomes dry it will thin out, contract, and harden, and come to be a strong and serviceable, though extremely sensitive, diaphragm. To avoid the effect of damp weather, I shellac both sides of the diaphragm after it becomes dry. The instrument may be used with the diaphragm in this condition; but to soften the sound and avoid the ringing noises so often observed in telephones of this class it has been found advisable by me to cover the skin after it is dry with linen paper, which should be well glued on, so that the skin and the paper really form one compound substance. Thus completed and constructed, I believe this diaphragm to be the most perfect as yet discovered.

D is an automatic call, constructed of wood or metal in the form shown. Its head has a tip, E, preferably of metal, and it is hung in a recess cut in the front casing, B, and held by a staple inclosing it, or other suitable device, the head resting upon a small coiled wire spring set in a hole or cavity behind it. When in its natural position the face of the call-lever rests near but not against the diaphragm, and when the head is carried back by pressing on the handle the spring in reacting forces the face of the call smartly against the diaphragm, and thus gives a clear and distinct call.

In my invention the end of the transmitting-wire passes through a wooden button, L, as shown in Fig. 4, the same being constructed with or without a metal tip, and, returning through the button, is wound around itself, and thus fastened. The face of the button P should be slightly concave, so that the outer edge only will rest against the diaphragm.

In putting up and using my invention the

transmitting-wire passes through an opening in the back of the casing A, and through a small aperture in the diaphragm made to receive it, and shown at H.

5 The strength of the diaphragm is such that the button holding the end of the wire may rest directly on its face, and the requisite tension be given without injury to the instrument.

The front casing, B, of the instrument is designed merely to concentrate and deliver sound upon and receive it from the diaphragm. Upon the outside is a concave funnel-shaped sound-channel, which gathers to its smaller part about two-thirds of the way through the casing, the balance of the way being cylindrical, as shown.

The automatic call is in the form shown by Fig. 5, and its use has been sufficiently explained above.

20 I am aware that animal membrane or skin has been used heretofore for telephone-diaphragms. I am also aware that it has been common to wet such cured membrane or skin, stretch it in place, and allow it to dry. I make no claim, therefore, to such broad subject matter, but limit my invention to the specific device or improvement claimed.

25 Having thus described my invention, what I claim to have invented, and desire to secure by Letters Patent, is—

1. A telephone-diaphragm made of animal

hide while in a raw or green condition, substantially as set forth.

2. A telephone-diaphragm composed of animal hide stretched and secured in place and having a covering of paper, substantially as and for the purpose set forth. 35

3. The section or block A of the case, having the chamber C and the annular shoulder, as described and shown, in combination with an animal-hide diaphragm which is stretched in place and secured outside the outer edge of the shoulder, substantially as and for the purpose set forth. 40

4. The combination of the casing composed of blocks A B, the diaphragm mounted in the block A, and the spring call-lever pivoted in a socket or recess in the block B, and having the projecting thumb-piece and the head or button E, which strikes the diaphragm when the thumb-piece is operated, substantially as and for the purpose set forth. 45 50

5. The combination of the block or section A, which carries the chamber C, and the section B, hinged thereto, and having the tapering sound-chamber, which is open through to the diaphragm, the blocks being closed together when ready for use, substantially as set forth. 55

WILLIAM D. G. QUIGLEY.

Witnesses:

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