

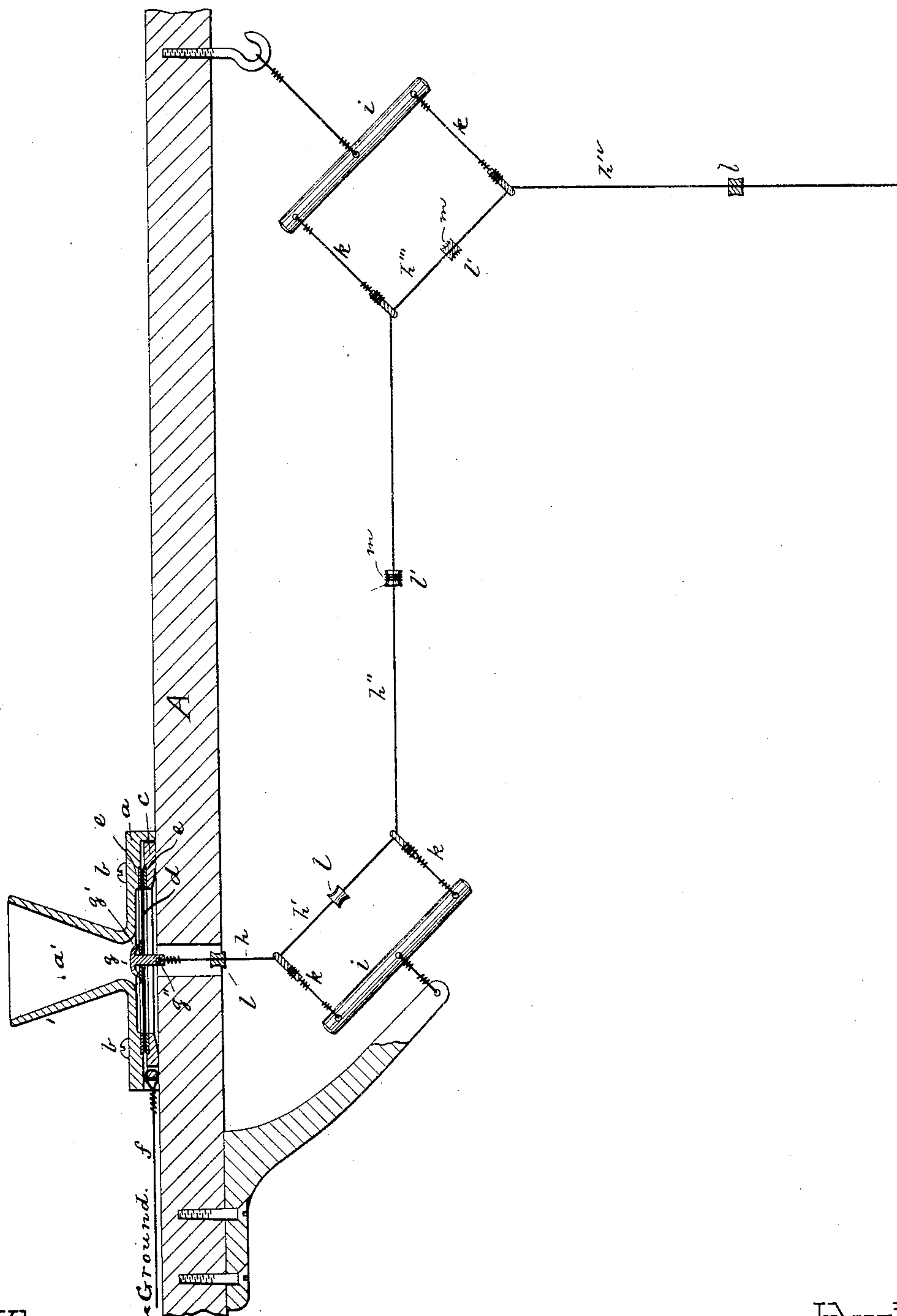
(No Model.)

H. J. & I. W. COLBURN.

Acoustic Telephone.

No. 243,214.

Patented June 21, 1881.



Witnesses.

Samuel W. Torrey
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Inventors

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UNITED STATES PATENT OFFICE.

HENRY J. COLBURN AND IRVING W. COLBURN, OF FITCHBURG, MASS.

ACOUSTIC TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 243,214, dated June 21, 1881.

Application filed April 8, 1881. (No model.)

To all whom it may concern:

Be it known that we, HENRY J. COLBURN and IRVING W. COLBURN, both citizens of the United States, residing at Fitchburg, in the county of Worcester, and State of Massachusetts, have jointly invented certain new and useful Improvements in Acoustic Telephones; and we do hereby declare that the same are fully described in the following specification and illustrated in the accompanying drawing.

This invention relates to improvements in acoustic telephones; and it consists, first, in combination with the vibratory diaphragm of a central button the head of which is made concave on its under side, where it rests against the outside of the diaphragm, or against a rubber or other washer or packing interposed between it and the diaphragm, by which arrangement we obtain a true bearing of the said button on the diaphragm, as well as an increased supporting-surface for the said button around the central perforation in the diaphragm. The button has an inwardly-projecting perforated shank, as usual, to which the wire is attached which is led to a corresponding acoustic telephone at the other terminus.

In combination with an acoustic telephone we employ a lightning-conductor, which is carried from any suitable part of the ring or case to the ground, so as to establish a proper ground-connection to conduct the lightning to the earth in case it should strike and follow the connecting-wires between the telephones.

To prevent an undue vibration of the shorter and unequal bends of the connecting-wire between the telephones we provide such wire with anti-vibratory dampers made of rubber, wood, leather, or suitable material, which may either be perforated and slipped over the wire before it is put up, or made split to encompass the wire, to which it may be secured by tying it with fine cord or wire, as may be desired. Such anti-vibratory device may be dispensed with on the long and straight connecting parts of the wire, as such long parts are generally of nearly equal lengths, producing tones of nearly equal pitch and vibration; but they are very essential on the short bends, which are generally of various lengths, and if

not provided with such a device would vibrate and producedifferent tones with a varying pitch, which would seriously interfere with the proper action of the telephone. It may, however, be desirable to have the said anti-vibrating dampers on the long stretches of line-wire, for the purpose of deadening the vibrations caused by disturbances of various kinds, such as wind, rain, hail, or shocks of any kind which disturb the stability of the atmosphere. The said anti-vibratory dampers are in no case to be used as points of support for attaching cords or wires to carry or sustain the line-wire, for the undue pressure which would thus be brought upon the said wire would defeat the purpose of this part of our invention.

In the drawing, A is a wall or other object, to which the telephone-case *a*, with its mouth-piece *a'*, is secured by means of screws *b b*, as usual.

c is the ring, between which and the case *a* the diaphragm *d* is secured.

e e are packings on two opposite sides of the diaphragm *d*, between it and the case *a* and ring *c*, as usual.

f is the lightning-conductor, connected to the telephone case or ring, and having its other end connected in a suitable manner to the earth, either by being buried in a damp place, or by being connected to a gas or water pipe, as may be most convenient.

g is the button at the center of the diaphragm *d*, which button has its head provided with a concave recess, *g'*, on the under side thereof, as and for the purpose set forth.

g'' is the shank of the said button, which passes through the perforation in the diaphragm *d*, as shown.

h h' h'' h''' h^{iv} is the connecting-wire between the telephones, which wire is supported by means of the ordinary bars, *i i*, and loops *k k*, or in any other similar manner.

l l' represent the anti-vibratory dampers arranged on the short-wire bends *h h' h'' h'''*, as and for the purpose set forth. The dampers *l l* are represented as perforated washers or buttons slipped over the wire before the latter is put up in place. The dampers *l' l'* are represented as being split, and secured by

means of fine cord or wire *m*, wound around said chambers after the main wire is put in place.

What we wish to secure by Letters Patent,
5 and claim, is—

1. In an acoustic telephone, the combination of the vibratory diaphragm *d* and the central button, *g*, having a concave recess, *g'*, on its under side, as and for the purpose set forth.
- 10 2. In an acoustic telephone and line, the

anti-vibratory dampers *l l'*, arranged upon the line-wire *h h' h'' h'''*, as and for the purpose set forth and described.

In testimony whereof we have affixed our signatures in presence of two witnesses.

HENRY J. COLBURN.

IRVING W. COLBURN.

Witnesses:

GEO. LANE,

STILLMAN HAYNES.