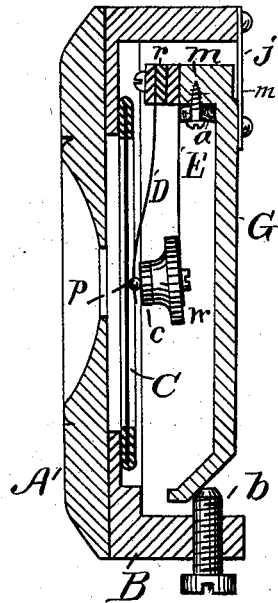


(No Model.)

H. B. LYTLE.  
TELEPHONE TRANSMITTER.

No. 260,488.

Patented July 4, 1882.



Witnesses.  
Geo. Willis Pince-  
J. H. Cheever.

Inventor.  
Henry B Lytle

# UNITED STATES PATENT OFFICE

HENRY B. LYTLE, OF BOSTON, MASSACHUSETTS.

## TELEPHONE-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 260,488, dated July 4, 1882.

Application filed February 1, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY B. LYTLE, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Telephone-Transmitters, of which the following is a specification.

My improvement relates to that form of transmitting-telephone in which the undulations or variations in the strength of an electric current necessary for reproducing articulate sounds in a receiving-instrument are produced by varying the resistance of the circuit through corresponding variations of the pressure between two electrodes of the circuit. A well-known form of such an instrument is the "Blake" transmitter, to which I have especially applied my invention. Experience has demonstrated that the extreme sensitiveness of this instrument, which in certain circumstances is advantageous, becomes a positive evil when the instrument is used as the transmitting-telephone of an operator in the central station of a telephone-exchange, since it causes the extraneous sounds due to the business of the entire room and the several voices of the different operators to be conveyed over any circuit which may be temporarily connected with the office to the annoyance of the subscriber and to the prejudice of the service of the exchange. Moreover, it has been discovered that a Blake transmitter, when set up in mills and factories, acquires, in virtue of the incessant vibrations of the walls of such buildings, a constant and corresponding vibration of its electrodes, and generates in consequence thereof, when being used, a loud humming noise, which, when reproduced in the receiving-telephone, drowns and renders confused and indistinct the genuine and legitimate spoken words of the orally-transmitted communications.

To remedy these practical difficulties, and to maintain the delicacy and sensitiveness of a transmitting-telephone while eliminating its tendency to collect extraneous vibrations, is the object of my invention.

To this end it consists in the combination, as hereinafter described, with and between the adjusting-lever and the electrode-carrying spring, of a block of some non-resonant substance, which at all times tends to check any abnormal vibration of the electrodes upon one another.

The accompanying drawing represents a vertical section of a transmitter containing my invention.

B represents a box or casing in which the mechanism of a telephone embracing my improvement is inclosed, and A is the top or cover of said box, which is perforated to serve as a mouth-piece.

D and E are springs which respectively carry the platinum electrode *p* and the carbon electrode *c*, which is fixed to the front of the weight *w*. The spring E is heavier than the spring D, and from its greater strength tends to keep the platinum electrode *p* in contact with the diaphragm C. The springs D and E are both suspended from the horizontal arm *m* of the metallic adjusting lever G and are insulated from one another by a piece of hard rubber or other non-conductor, *r*. The spring D is connected by a wire (not shown) to one of the battery-wires, and the spring E is in contact with the arm *m* of the adjusting-lever G, and thence through the metal casing B with the other battery-wire.

Between the spring E, at its point of attachment, and the main stem of the adjusting-lever G I place a piece of cork or other non-resonant material, *a*. This fits easily when the lever G is adjusted back by means of the screw *b*, and when the screw *b* is tightened up to give the requisite initial pressure the cork is also made to fit tightly in place, and will then remain securely without any other fastening. Yet, if preferred, I may secure it with the set-screw *m'* passing through its center and entering the arm *m* of the lever. The size of the cork which I have found to be most suitable is about three-eighths of an inch square and about one-tenth of an inch thick. By this arrangement the transmitter is prevented from absorbing extraneous vibrations and sounds in the room which are not intended for transmission. It is also prevented from breaking when loudly spoken into, and does not hum when set up on the walls of factories and other places, which ordinarily tends to greatly jar the electrodes and originate between them irrepressible humming noises.

By the use of my invention I have also ascertained, by actual practice, that a correct adjustment once obtained is kept unimpaired

and no alteration is required at any time, while heretofore it has been found practically impossible to maintain a constant adjustment. I have also found that the range of adjustment in a transmitter constructed as hereinbefore described, is materially amplified.

I claim—

1. The combination, in a telephone-transmitter, with the adjusting-lever and spring carrying the outer electrode, of a block, plate, or piece of non-resonant material—such as cork—interposed between said lever and spring, substantially as described.

2. The combination, in a transmitting-telephone, with the adjusting-lever G and contact-springs E and D, depending therefrom, of the non-resonant and resilient dampener  $\alpha$ , in-

terposed between said lever G and spring E, substantially as described.

3. In a telephone-transmitter, the combination of the contact-springs, the adjusting-lever and screw, and a piece of cork or other suitable semi-elastic substance of sufficient length to compress tightly the outer electrode-spring, substantially as and for the purpose described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 30th day of January, 1882.

HENRY B. LYTLE.

Witnesses:

GEO. WILLIS PIERCE,  
THOS. D. LOCKWOOD.