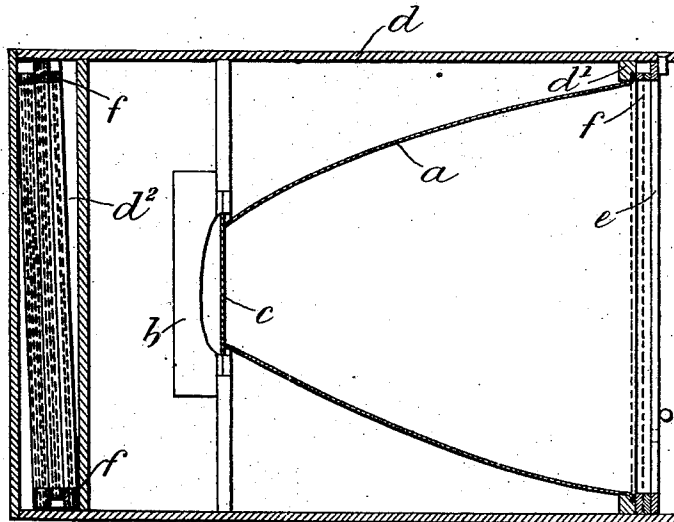


W. J. MARCHANT.
TELEPHONIC TRANSMITTER.
APPLICATION FILED AUG. 31, 1911.

1,054,581.

Patented Feb. 25, 1913.



WITNESSED

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UNITED STATES PATENT OFFICE.

WILLIAM JOHN MARCHANT, OF LONDON, ENGLAND.

TELEPHONIC TRANSMITTER.

1,054,581.

Specification of Letters Patent.

Patented Feb. 25, 1913.

Application filed August 31, 1911. Serial No. 647,042.

To all whom it may concern:

Be it known that I, WILLIAM JOHN MARCHANT, a subject of the King of Great Britain, residing in London, England, and whose post-office address is Stolz Electrophone Company Limited, 85 Fleet street, in the city of London, England, manager; have invented certain new and useful Improvements in Telephonic Transmitters, of which the following is a specification.

The primary object of this invention is to increase the efficiency of audiphone apparatus of the kind comprising telephonic transmitter and receiver in combination, but it will be obvious that the invention is applicable to telephonic transmitters in general of the kind in which the sound vibrations are collected or concentrated by a diaphragm, to which type of transmitter my invention is restricted. The invention may be described broadly as providing such transmitters with a mouthpiece or horn which is parabolic in section, such as have been previously proposed in association with telephonic transmitters unprovided with diaphragms, and in so fixing the transmitter and horn with respect to each other that the diaphragm of the transmitter occupies the focal plane of the horn either exactly or approximately, that part of the paraboloid in rear of the focal plane being of course cut away. By means of such an apparatus the sound waves collected in the horn are by reflection concentrated on the diaphragm, thereby obtaining increased loudness in the receiver associated with the transmitter to which the horn is attached.

Such an arrangement is illustrated in longitudinal section in the accompanying drawing, in which—

a represents the mouthpiece or horn which may be of metal or other suitable material and which has the shape of a paraboloid of revolution with the end part cut away, so that the rear edge of the horn terminates in or substantially in the focal plane of the paraboloid constituting the horn, which increases in size from its rear or inner end to the front or outer end.

b represents the box of the transmitter which may be of any suitable character, and *c* represents the transmitter diaphragm

which, as shown, is positioned in or approximately in the focal plane of the paraboloid and contiguous with the rear edge of the horn.

This apparatus is secured in a suitable frame or casing such as *d* which is preferably constructed with an annular clamping ring *e* adapted to be secured as by means of a bayonet catch to an inwardly projecting flange *d'* of the casing to which the outer edge of the horn *a* is fixed. The object of the clamping ring *e* is to provide means for locking over the mouth of the horn *a* one or more of a series of screens of gauze or other suitable material for the purpose of graduating the intensity of sound produced in the receiver. For convenience the box or casing *d* is made with a compartment *d'* at its rear end adapted to accommodate these screens which are made of material of varying thickness or mesh stretched over the rings *f* which are of a diameter adapted to fit within the edge of the casing *d* and abut against the flange *d'* when clamped in position by the clamping ring *e*.

Having thus described the nature of this invention and the best means I know of carrying the same into practical effect, I claim:—

A telephonic transmitter comprising a casing containing a horn or mouth-piece, having the shape of a paraboloid of revolution with the end part cut away so that the rear edge of the horn terminates approximately in the focal plane of the paraboloid, the said horn increasing in size continuously from the rear smaller end to the front larger end, a diaphragm fixed approximately in the focal plane of the paraboloid and contiguous with the said rear edge of the horn, a series of removable sound graduating screens, and means carried by the casing for securing the screens one at a time over the said large end of the horn.

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

WILLIAM JOHN MARCHANT.

Witnesses:

JAMES SHAKESPEARE SMITH,
THOMAS GOULBOURN.