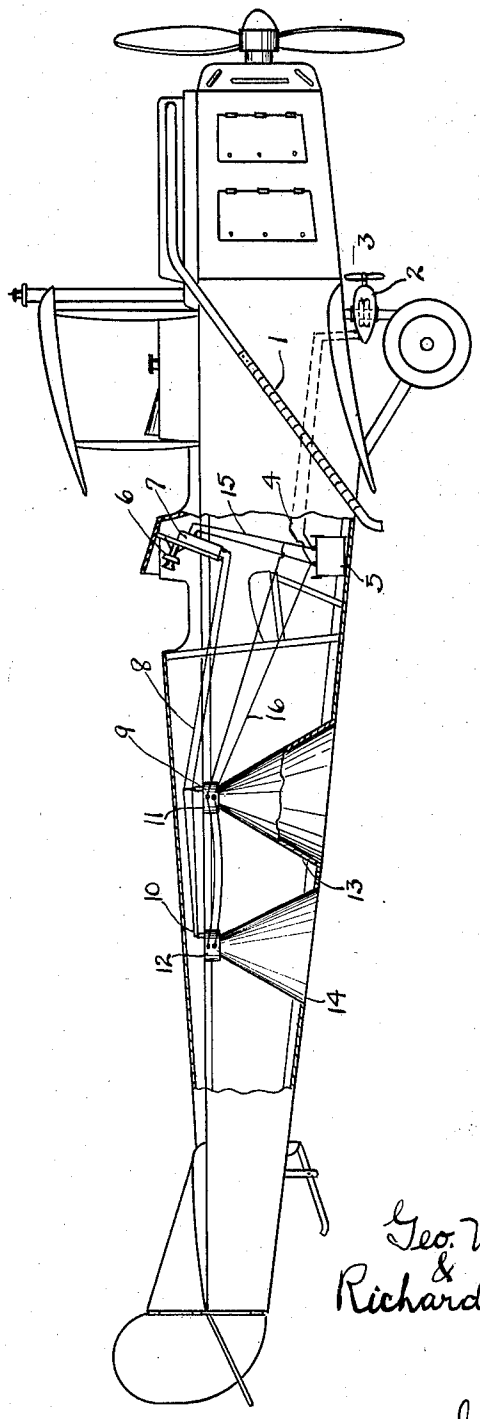
April 20, 1926. 1,581,586

G. W. McCAULEY ET AL

AIRPLANE SOUND AMPLIFIER

Filed Dec. 4, 1924



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UNITED STATES PATENT OFFICE.

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AIRPLANE SOUND AMPLIFIER.

Application filed December 4, 1924. Serial No. 754,000.

To all whom it may concern:

Be it known that we, GEORGE W. McCAULEY and RICHARD W. MACKIE, citizens of the United States, residing at Houston, Harris County, Texas, have invented a certain new and useful Improvement in Airplane Sound Amplifiers, of which the following is a specification.

Our invention relates to sound amplifiers particularly adapted for use on airplanes. It comprises electrically operated means for amplifying and transmitting sounds from an airplane for different uses in commercial pursuits and in warfare.

It is an object of the invention to provide a sound transmitting and amplifying apparatus for use upon airplanes which will be capable of operation in a convenient manner from the seat in the said airplane.

It is also an object to so arrange the apparatus that it will transmit the sound most effectively to the earth. It is desired to transmit sounds of all kinds such as signals, music, spoken words and, if, desired, simply a roar of sound designed to drown out all other sounds.

Referring to the drawing we have shown an airplane with one embodiment of the invention installed thereon, the parts being illustrated diagrammatically.

In the drawing we have shown a side view of an airplane of ordinary construction, the representation being to a large extent diagrammatic. The parts of the plane need not be specifically referred to except for the fact that we contemplate employing a muffler 1 for the exhaust of the engine, with the object in view of doing away with the ordinary noise of the exhaust during the operation of the airplane. This will make it possible to more clearly hear the other sounds which it is desired to communicate to the earth by the use of our invention.

In addition to the ordinary apparatus we desire to use a small electric generator 2 which is to be located preferably on the lower side of the body of the car, and to be operated through a small propeller 3 operated by means of the rush of air occurring during the flying of the airplane. This generator may be of any ordinary construction, and will be connected by means of an electric circuit 4 with a storage battery 5.

As has been previously stated, the purpose of the device is to communicate sounds of any nature from the airplane to the earth, but we have shown a device whereby the spoken words from an operator may be transmitted. There is therefore a transmitter including a microphone 6 adjacent the seat of the car, and this microphone is connected directly with a power amplifier 7. The said amplifier in turn is connected by electrically conducting wires 8 with the posts 9 and 10 of the loud speakers 11 and 12, respectively. These said loud speakers are connected at the upper ends of horns or megaphones 13 and 14 opening on the lower side of the body of the car on the rear of the passenger seat.

The power amplified 7 is connected directly to the battery 5 by means of wires 15. A circuit from the battery is also connected by wires 16 with the loud speakers 9 and 10, respectively, as shown in the drawing.

There are shown two separate loud speakers with the amplifying horns connected therewith in the installation disclosed in the drawing. It is understood however, that one or more of these loud speakers may be used to communicate depending upon the conditions obtaining in each particular situation. The loud speakers will be directed downwardly so that sound communicated thereto will be thrown toward the earth. Thus a passenger sitting in the seat of the airplane may speak into the receiving microphone 6 and the vibrations thus set up will be amplified through the amplified 7 and will be transmitted by means of the wires 8 to the loud speakers previously described. This agitation thus set up through the loud speakers will be further amplified and increased therein and be thrown downwardly toward the earth in such volume that they may be distinctly understood by those below upon the ground.

It will be thus possible to deliver a set speech so that it may be distinctly heard, or words, or slogans called out, and for advertising purposes or otherwise, or singing or music may be thus communicated. It will also be obvious that with very little change the installation will be adapted to transmitting music from a phonograph or some musical instrument, or words or sounds in a code sequence may be transmitted in the same manner.

It will therefore be obvious that an installation of this kind will be adapted for numerous purposes which adapt the appa-

ratus for use in matters of entertainment, or for advertising or for communicating messages or signals in time of warfare, and for various other purposes. It will be possible to install an apparatus of this kind upon an ordinary airplane with very little change in the contruction of the airplane itself. It will therefore be economical and cheap to construct, and will have various uses which will be obvious to those skilled in the art without further description.

What we claim as new and desire to protect by Letters Patent is:

1. A sound transmitting apparatus for airplanes comprising a microphone, a power amplifier connected therewith, a storage battery, a generator connected therewith, a plurality of downwardly directed loud speakers secured within the body of the airplane and connected therewith, and electrical connections between said battery and said power amplifier, and between said battery and loud speakers, and between said power amplifier and said loud speakers for the purpose described.

2. In combination with an airplane fuselage, a plurality of funnel-shaped megaphones directed downwardly and connected integrally to said fuselage, a loud speaker with each said megaphone, a power amplifier and electrical connections between the same and a sound producing means.

In testimony whereof we hereunto affix our signatures this the 25th. day of November, A. D. 1924.

GEORGE W. McCAULEY.
RICHARD W. MACKIE.