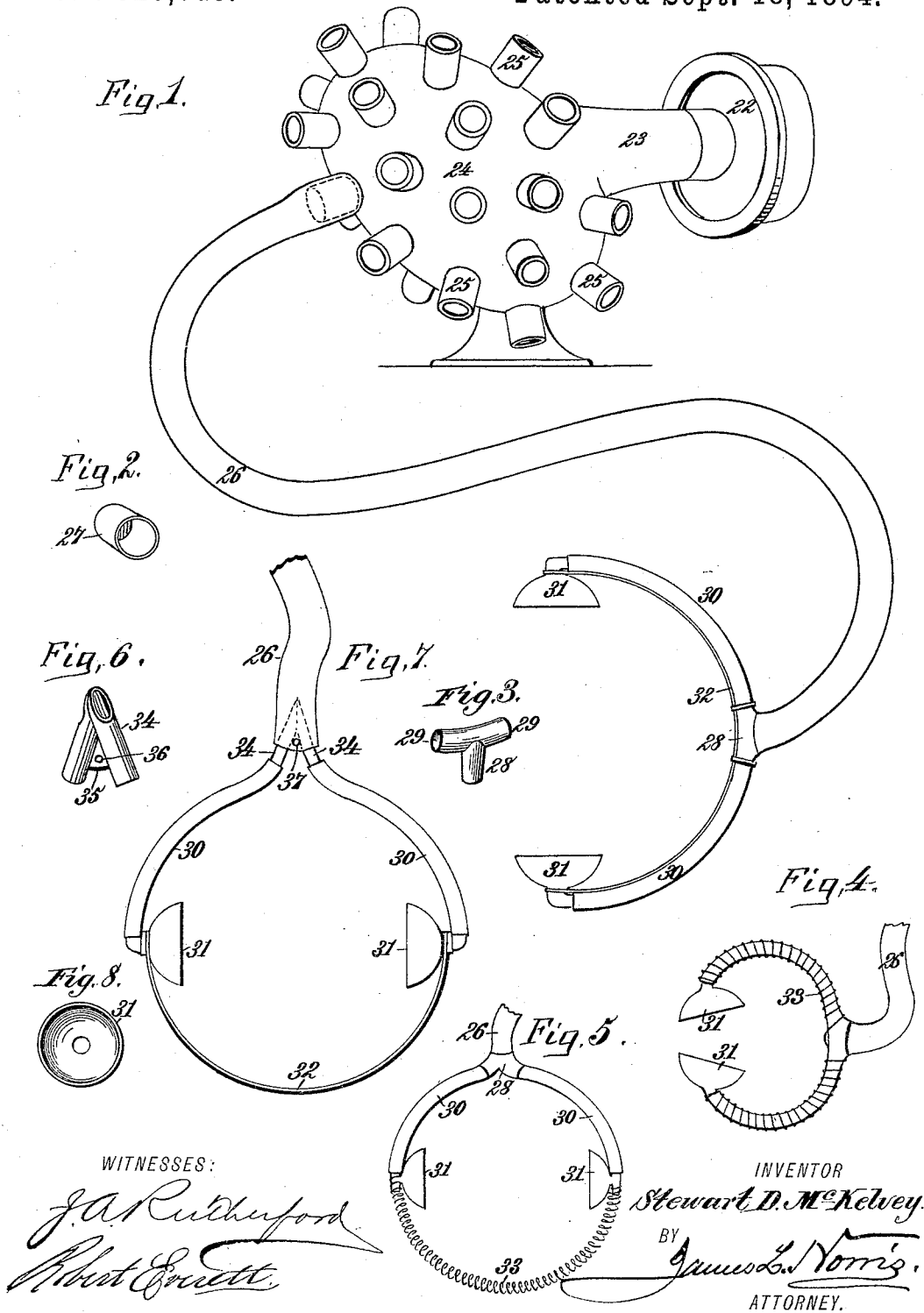


(No Model.)

S. D. McKELVEY.
APPARATUS FOR COLLECTING, CONCENTRATING, AND DISTRIBUTING
SOUNDS.

No. 526,046.

Patented Sept. 18, 1894.



WITNESSES:

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STEWART D. MCKELVEY, OF CANTON, OHIO, ASSIGNOR OF ONE-THIRD TO
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APPARATUS FOR COLLECTING, CONCENTRATING, AND DISTRIBUTING SOUNDS.

SPECIFICATION forming part of Letters Patent No. 526,046, dated September 18, 1894.

Application filed May 14, 1892. Serial No. 433,052. (No model.)

To all whom it may concern:

Be it known that I, STEWART D. MCKELVEY, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have invented new and useful Improvements in Apparatus for Collecting, Concentrating, and Distributing Sounds, of which the following is a specification.

My invention has for its object to provide simple and efficient means for collecting and concentrating the sounds reproduced by a phonograph and distributing the same in several directions, or to several different points.

To these ends the invention consists in certain novel features of construction and new combinations of devices as hereinafter described and claimed.

In the annexed drawings illustrating the invention—Figure 1 is a view of devices for concentrating and distributing sounds reproduced by a phonograph. Fig. 2 is a view of a cap for closing a distributing tube. Fig. 3 is a detail view of a connecting piece for the parts of an individual conducting tube. Figs. 4, 5, 6 and 7 are detail views of modifications hereinafter referred to. Fig. 8 is a view of the inner face of an ear cup.

In reproducing sound from a phonograph the sound waves may by my invention be concentrated and distributed in several directions, or to several different points by means of the devices illustrated in Fig. 1, in which the reference-numeral 22 indicates the cap of a diaphragm chamber, connected with a phonograph. To this cap is attached a short tapered tube 23, which may form part of an oval shaped concentrating and distributing chamber 24 having a number of short tapered tubes or nipples 25 projecting therefrom in various directions. The chamber 24 may be made of metal, hard rubber or other suitable material. The tube 23 may be made of flexible material, if preferred. I have found brass a satisfactory material for construction of the chamber 24 and for the short tubes 25, which can be tapped into said chamber or shell in a well known manner. To each of the short tubes 25 is to be removably attached a flexible, individual, sound-conducting tube 26, provided with ear-cups, as shown. When an individual tube 26 is removed from a short

tube or nipple 25, the latter may be closed by means of a cap 27; Fig. 2, or I may provide each tube 25 with a cock, or valve, of any suitable construction, for the purpose of cutting off the transmission of sound in that direction, either with or without removal of the individual ear-tube.

As shown in Fig. 1 the individual tube 26 may have inserted into its outer end a hard rubber, T-shaped coupling-piece 28, Fig. 3, provided with slightly curved arms 29 for attachment of the flexible tubes 30, to which the ear-cups 31 are attached. A bow spring 32 may be fastened in contact with the tubes 30, as shown, for the purpose of drawing the ear-cups toward each other and clamping them to the head. Instead of the bow spring 32 a spiral spring 33 may be arranged on the tubes 30, as shown in Fig. 4, for the same purpose; or as shown in Fig. 5 the spiral spring 33 may be arranged to pass behind the head. The bow spring 32 may also be arranged in the same manner, as shown in Fig. 7.

As a modification of the device shown in Fig. 3, an inverted, V-shaped coupling tube 34, Fig. 6, may be inserted in the end of the individual tube 26 to connect the same with the tubes 30, as shown in Fig. 7. The double, or inverted, V-shaped coupling tube 34 is provided with a web 35 having a perforation 36 for passage of a pin or other fastening 37, Fig. 7, by which the connecting device 34 will be held in place.

What I claim is—

1. In an apparatus for collecting, concentrating and distributing sound waves, the combination of a diaphragm chamber, a concentrating and distributing chamber, connected with the diaphragm chamber, and a plurality of tubes for connecting the concentrating and distributing chamber with a series of separate ear-cups, substantially as described.

2. In an apparatus for collecting, concentrating and distributing sound waves, the combination with a diaphragm-chamber, of a concentrating and distributing chamber and a series of independent, sound-conducting tubes leading from the distributing head to a series of different points, substantially as described.

3. In an apparatus for collecting, concentrating and distributing sound waves, the combination with a diaphragm-chamber, of a concentrating and distributing chamber having a number of short tubes, or nipples, projecting therefrom, and a series of detachable independent tubes for conducting sound from said concentrating and distributing chamber to a corresponding number of different points, substantially as described.

4. In an apparatus for collecting, concentrating and distributing sound, the combination with a diaphragm-chamber, of a concentrating and distributing chamber, a plurality of independent tubes connected with said chamber for conducting sound to different points, ear-cups connected with said tubes and springs for clamping the said ear-cups to the head, substantially as described.

5. In an apparatus for collecting and distributing sound waves, the combination with a diaphragm-chamber, of a concentrating and distributing chamber, having a series of short tubes, or nipples, a series of flexible sound-conducting tubes, a tubular connection or coupling inserted in one end of each sound-conducting tube, branch tubes connected to said coupling, ear-cups attached to said branch tubes, and a spring for clamping the ear-cups to the head, substantially as described.

In testimony whereof I have hereunto set my hand and affixed my seal in presence of two subscribing witnesses.

STEWART D. MCKELVEY. [L. s.]

Witnesses:

W. H. SMITH,
JOHN I. LYNCH.