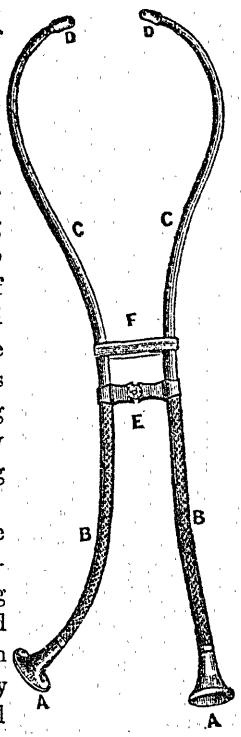
There is little doubt that this law holds with regard to sounds passing through the air, and carried to the ear in the ordinary manner, without the aid of any mechanical contrivance, as for instance that of a watch placed in front of the face; but as the restriction of hearing to one ear, and its suppression in the other, admit of being rendered more obvious by an apparatus that shall collect sound, prevent its diffusion through the air, and carry it direct to the ear, I propose to give the result of experiments made with an instrument which I have invented for hearing with both ears respectively, and which, as it is specially adopted for the auscultation of differences in the sounds of different parts of the chest, I have named the Differential Stethescope, or Stethophone.

The results thus procured will be more satisfactory than those obtained by ordinary audition; a sound will be increased as a visual object is magnified by the microscope, and as both ears are similarly dealt with, a perfect parity of conditions will hold in respect of both ears.

The differential stethophone (see figure) is simply an instrument consisting of two hearing tubes or trumpets, or Stethoscopes, provided with collecting cups, and ear-knobs, one for each ear respectively. The two tubes are, for convenience mechanically combined, but may be said to be acoustically separate, as care is taken that the sound once admitted into one tube, is not communicated to the other. The tubes are composed of two parts nearly equal in length, one near the ear knob, made of metal (C); while the other part, near the collecting cup, is made of metal wire (B), to impart flexibility. The ear-end is curved, so as to approach the ear, and is supplied with an ivory knob (D) for insertion into the *meatus externus*. The other end of the tube, being intended to collect sound, is supplied with a hollow cup, or receiver (A) made of wood, or some such material. The mechanical construction of this instrument is borrowed from the Stethoscope contrived by Dr. Caman of New York, and intended by its inventor for the purpose of hearing with both ears sounds emanating from *one* point, and collected into one cup. The two tubes are brought near together, a few inches in front of the face, by means of a connecting bar (E), but calculated to prevent the transmission of sound from one tube to the other. This bar is supplied with a joint, which permits the tubes to be freely moved, as is necessary in applying the knobs to the ears. The two knobs are kept steadily in the ears by means of an elastic band (F), connecting the two tubes near the bar, already described.



The instrumant being fitted into the ears, with the knobs directed upwards, and the cup being applied equally near to, or upon a sounding body, say the inflating lung, or a watch, and the conditions for collecting sound being the same, the sound is heard with both ears, as in ordinary hearing. But if one cup be removed a little, say a half or quarter of an inch from the watch, (for we shall