Feb. 20, 1923. 1,445,711

J. A. RAYDER

STETHOSCOPE

Filed Oct. 21, 1921

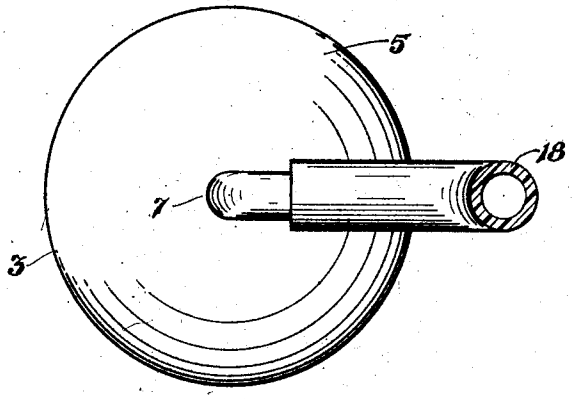

Fig. 1.

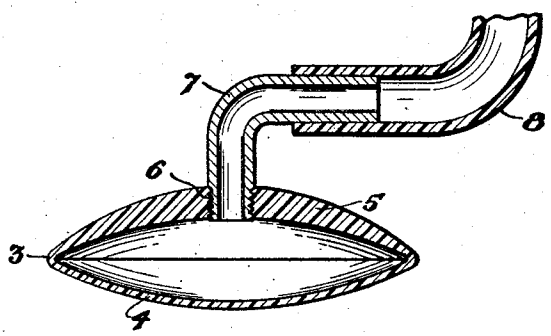

Fig. 2.

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UNITED STATES PATENT OFFICE.

JOSEPH A. RAYDER, OF PHILADELPHIA, PENNSYLVANIA.

STETHOSCOPE.

Application filed October 21, 1921. Serial No. 509,273.

To all whom it may concern:

Be it known that I, JOSEPH A. RAYDER, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Stethoscope, of which the following is a specification.

This invention relates to stethoscopes more particularly adapted for the localization of sounds and the like, and in particular it refers to a stethoscopic instrument for use by medical practitioners and others when examining or determining certain conditions existing in the human body.

The primary object of this invention is the provision of a simple, cheap and compact stethoscope for ready use or application to various parts of the body when examining for the detection of constitutional defects.

Another object of this invention is to provide a novel form of stethoscope for use by physicians and medical practitioners which by virtue of its very formation lends itself for use in normally inaccessible or difficult locations on the human body.

A still further object of this invention is provide a stethoscope of the type referred to which is neat, compact and very efficient in use.

With the foregoing and other objects in view as will be more clearly apparent from the foregoing description, my invention consists essentially in the formation of the stethoscopic body proper as a unitary structure having opposed concavo-convex cross section portions, one of which is thinner than the other.

In the further disclosure of the invention reference is to be had to the accompanying drawings in which—

Figure 1 is a plan view of my improved stethoscope; and,

Figure 2 is a central vertical section therethrough.

Referring more particularly to the views the numeral 3 designates my improved stethoscope in its entirety, and it will be particularly observed on an examination of Figure 2 that it comprises frontal and rear portions 4—5, respectively, both of which are of concavo-convex cross section diametrically of the device, the frontal portion 4 being comparatively thin and of a uniform thickness throughout its superficial area, whereas the rear portion is of greater thickness and is furthermore crescent-shaped in cross section, whereby the central portion is rendered more rigid and into which is screw-threaded at 6 the usual elbow or the like 7 for the attachment thereto of the ear-piece tube 8, a fragment only of which is shown in that it forms no part of my present invention.

It is to be particularly observed that I preferably make my improved stethoscope 3 of hard rubber or other appropriate material, although it may be also made from various types of metal or metal alloys, but in practice I have found that hard rubber or analogous material gives very excellent results.

From the foregoing description it will be readily seen that due to the unitary formation and the relatively reduced thickness of the frontal part 4, the disturbing noise or other sound will be readily transmitted and conducted to the ears of the person using the instrument. Still further it is to be noted that due to the peculiar form in cross section of my improved stethoscope and its very thin frontal portion or diaphragm 4 with its consequent sensitiveness relative to the back portion 5 that the sounds or vibrations, listened to will be relatively augmented and so transmitted.

Whilst there has been shown and described a preferred embodiment of my invention the same is not to be construed as conclusive, in that it will be obvious that changes may be made in the shape or contour thereof without departing from the spirit of the invention as more particularly defined by the appended claims.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. As a new article of manufacture a stethoscope comprising integrally formed opposed concavo-convex dished portions the frontal portion whereof is of uniform thickness throughout its entire surface whilst the back portion is of crescent shape cross section with a gradually decreasing thickness from its central part to that point where it

adjoins the frontal portion, said back portion having an elbow attached thereto at its center.

2. As a new article of manufacture a stethoscope of hard rubber comprising integrally formed opposed concavo-convex dished portions the frontal portion whereof is of uniform thickness throughout its entire surface whilst the back portion is of crescent shape cross section with a gradually decreasing thickness from its central part to that point where it adjoins the frontal portion, said back portion having an elbow attached thereto at its center.

JOSEPH A. RAYDER.