Feb. 26, 1924. 1,485,124

M. J. MYRES

STETHOSCOPE

Filed Feb. 14, 1922

Fig. 1.

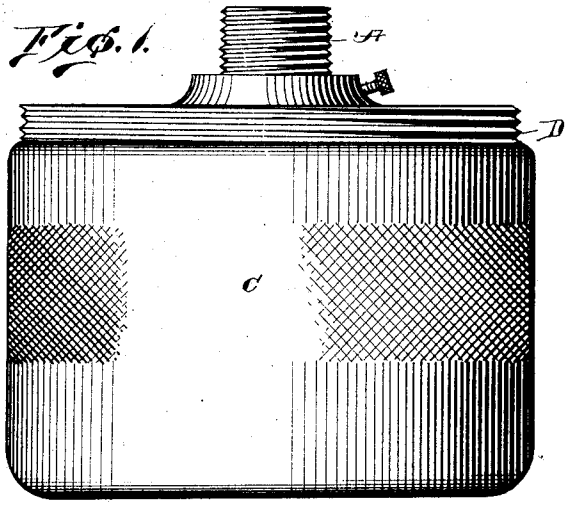
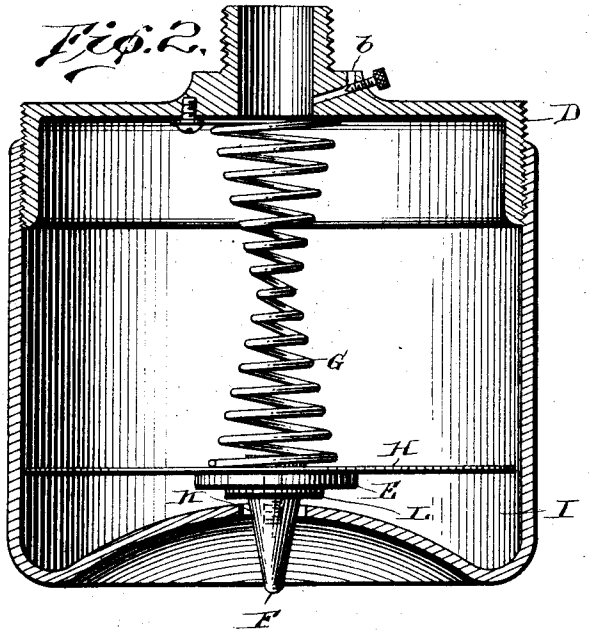


Fig. 2.



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UNITED STATES PATENT OFFICE.

MAGNUS J. MYRES, OF DAYTONA, FLORIDA.

STETHOSCOPE.

Application filed February 14, 1922. Serial No. 536,534.

To all whom it may concern:

Be it known that I, MAGNUS J. MYRES, a citizen of the United States, and resident of Daytona, in the State of Florida, have invented a new and useful Improvement in Stethoscopes, of which the following description, in conjunction with the accompanying drawings, is a specification.

This invention relates to improvements in stethoscopes, and has for its principal object the adjustability of all its parts and the correct and amplified transmission of sound caused by mechanical vibrations and friction rubs in the human anatomy.

This invention has for a further object the means of readily localizing any abnormal sounds as hereinafter set forth.

This improved stethoscope allows broken or damaged parts to be readily replaced. This factor is important when the instrument is used where it is apt to receive rough usage as in the Army when in the field. By reason of the ability of this stethoscope to be accurately adjusted for certain lines of examination, it may be utilized by specialists to localize the sound of some particular organ.

In the accompanying drawings Figure 1 is a view of the stethoscope head assembled. Figure 2 is a cross section of the stethoscope head showing the parts in position. "A" is the threaded end intended to fit the ear pieces of the standard model now in use in the Army. "B" is an air vent, controlled by a milled screw. "C" is an adjustable sounding chamber. "D" is a milled screw for the adjustment of "C". "E" is a lead weight. "F" is a removable pointed stylet. "G" is a double spiral suspension spring. "H" is a diaphragm constructed of mica. "I" is the receiving chamber. "K" is a circular hole passing through the outer shell allowing air to pass through to the diaphragm "H".

The adjustment of a stethoscope being dependent upon the adjustability of the sound chamber, this invention makes possible a minute adjustment by means of a milled screw adjustment of the sound chamber, and, in addition thereto, an adjustable air vent.

Referring to the accompanying drawings, and more especially to Figure 2 showing a cross section, it will readily appear that this invention is not only simple of construction but is more efficient and effective than others of this type. By its operation the sound waves pass through the aperture "K", operating in receiving chamber "I", in addition to being received upon the stylet "F". The lead weight "E" is fixed to the stylet "F"and the diaphragm "H", which in turn is fitted to the double spiral spring "G". The diaphragm "H" has been found to be more efficient if constructed of mica, in that it responds correctly to all periods, while those constructed of metal respond excessively to their own periods or sound frequencies. The double conical spring "G" is designed for the purpose of counteracting the upward and downward thrust, and is effective in transmitting the damped vibration more truly. It can readily be seen that the sound chamber may be easily and effectively adjusted by revolving the outer shell. The stylet "F" is adjusted by means of the milled screw upon which it is screwed.

I claim:

1. A stethoscope of the character indicated comprising a cylindrical body section, a concavo-shaped bottom section integral with and closing the lower end of the body section, and having a central opening, a top section longitudinally adjustable within the open end of the body section and formed with a sound outlet, a diaphragm dimensioned in accordance with the interior of the body section, and located therein immediately above the bottom section, a weighting element affixed to the lower surface of the diaphragm, a stylus depending from the weighting element and projecting through the opening in the bottom section and a spring interposed between said top section and the diaphragm.

2. A stethoscope of the character indicated comprising a cylindrical body section, a concavo-shaped bottom section integral with and closing the lower end of the body section, and having a central opening, a top section longitudinally adjustable within the open end of the body section and formed with a sound outlet, a diaphragm dimensioned in accordance with the interior

of the body section and disposed therein immediately above the bottom section, a weighting element concentrically affixed to the under surface of the diaphragm, a tapered stylus depending from the weighting element and projecting through the opening in the bottom section, a spring diverging in opposite direction from its vertical axis and interposed between the diaphragm and the top section, and means in connection with the top section for regulating the emitted sounds.

MAGNUS J. MYRES.