

Feb. 16, 1932.

S. JOSEPH

1,845,795

STETHOSCOPE

Filed Sept. 29, 1930

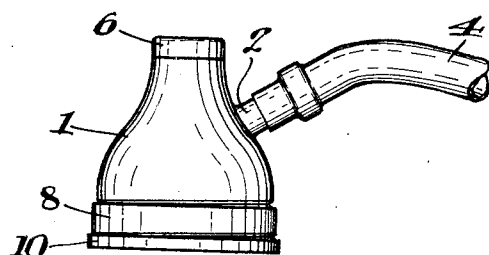


FIG 1

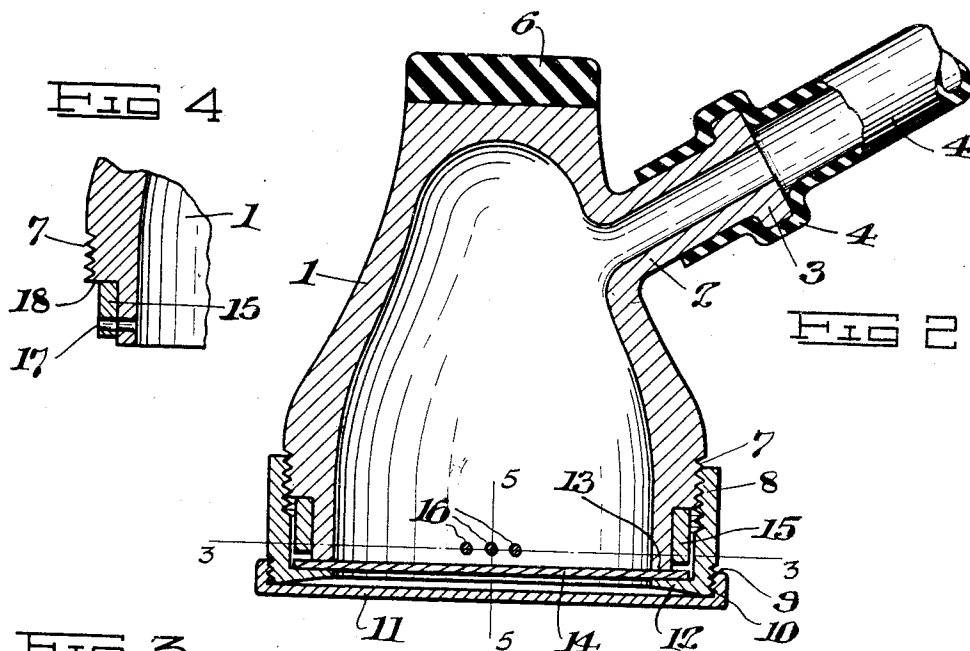


FIG 2

FIG 3

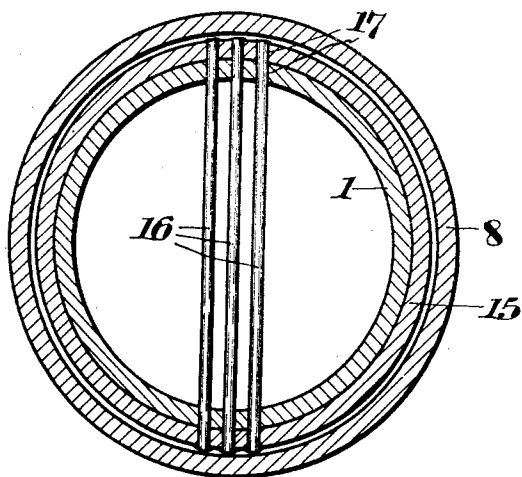
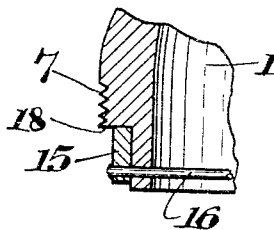


FIG 5



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STETHOSCOPE

Application filed September 29, 1930. Serial No. 485,272.

The object of my invention is to provide a novel stethoscope and the novel arrangement and combination of parts as described in the accompanying drawings.

I attain these and other objects of my invention by the apparatus illustrated in the accompanying drawings, in which,—

Figure 1 is a side elevation of the invention, reduced size;

Fig. 2 is a longitudinal sectional view;

Fig. 3 is a transverse sectional view on line 3—3 of Fig. 2;

Fig. 4 is a detail sectional view showing the small hole provided in the inner ring 15 for the entry of the wires 16; and

Fig. 5 is a similar detail sectional view on line 5—5 of Fig. 2, showing the wires 16 in place.

Like characters of reference designate like parts in each of the several views.

Referring to the accompanying drawings, I provide a bell 1, having a sound conveying tube 2 provided with an annular flange 3 to engage the end of the usual rubber tubing 4, which extends to the ear piece of the stethoscope, (not shown).

I provide a rubber sponge disc 6 on the top of the stethoscope so that the instrument can be picked up and held conveniently without touching the fingers on the bell.

The bell is provided with an annular recessed portion 18, extending to the edge of the mouth of the bell. Seated in this recess is an inner ring 15 which is provided with apertures 17 to receive the wires 16 which are disposed at right angles to the sound conveying tube 2.

I provide a diaphragm 14 which is engaged by the annular flange 12 of the ring 8, which has a threaded engagement with the threaded portion 7 of the mouth of the bell. The ring 8 also has an exterior threaded portion 9 which is engaged by the threaded flange 10 of the cap 11, which covers the entire bottom of the instrument, enclosing the diaphragm so that damage cannot happen to the diaphragm.

It will be noted that the band 15 sets up above the face of the bell, being seated in the recess 18 so that the ring 8 can be screwed

to the bell holding the mouth of the bell and covering the sounding wires to form an airtight enclosure. The cap 11 is releasably attached to the ring 8 to protect the diaphragm 14.

The face of the annular flange 12 is beveled, as shown in Fig. 2. This bevel is of importance and a stronger acoustic sound can be obtained.

The wires 16 function as a sounding board to convey or magnify sound and are disposed at right angles to the sound conveying tube and are mounted in the inner ring 15. Wires 16 are spaced from the diaphragm 14 which also transmits sound waves to the stethoscope chamber and into the tube 4 to conventional ear pieces (not shown in the drawings and not a part of the novel construction claimed as my invention). The band 8 which is screwed to the bell 1 as shown in Fig. 2, has a slight bevel and holds the diaphragm in place. The cap 11 encloses and protects the diaphragm when the instrument is not in use, but may be removed while the instrument is in use.

What I claim is:

1. In a stethoscope, the combination of a bell having a sound conveying tube for engagement by a rubber tubing to the ear piece, a diaphragm, wires extending across the mouth of the bell at right angles to the plane of the sound conveying tube, and means for securing the diaphragm to the mouth of the bell.

2. In a stethoscope, the combination of a bell having a sound conveying tube for engagement by a rubber tubing to the ear piece, a diaphragm, wires extending across the mouth of the bell at right angles to the plane of the sound conveying tube, the mouth of the bell being annularly recessed, a ring seated in said annular recess, said ring and the mouth of the bell having apertures to receive the ends of the aforesaid wires, and means for securing the diaphragm to the bell.

3. In a stethoscope, the combination of a bell having a sound conveying tube for engagement by a rubber tubing to the ear piece, a diaphragm, wires extending across the mouth of the bell, the mouth of the bell being

annularly recessed, a ring seated in said annular recess, said ring and the mouth of the bell having apertures to receive the ends of the aforesaid wires, and means for securing
5 the diaphragm to the bell.

4. In a stethoscope, the combination of a bell having a sound conveying tube for engagement by a rubber tubing to the ear piece, a diaphragm, wires extending across the
10 mouth of the bell, the mouth of the bell being annularly recessed, a ring seated in said annular recess, said ring and the mouth of the bell having apertures to receive the ends of the aforesaid wires, means for securing the
15 diaphragm to the bell, and a bottom cap releasably secured to the apparatus to completely enclose the diaphragm.

5. In a stethoscope, the combination of a bell having a sound conveying tube for engagement by a rubber tubing to the ear piece, a diaphragm, the bell being exteriorly threaded, an L-shaped ring engaging the diaphragm and having threaded engagement with the threaded portion of the bell to hold
25 the diaphragm in contact with the face of the mouth of the bell, said L-shaped ring having the face of its annular flanged portion beveled to permit of obtaining an amplified sound thereby and a cap releasably
30 engaging the aforesaid ring.

6. In a stethoscope, the combination of a bell having a sound conveying tube for engagement by a rubber tubing to the ear piece, a diaphragm, the bell being exteriorly threaded, an L-shaped ring engaging the diaphragm and having threaded engagement with the threaded portion of the bell to hold the diaphragm in contact with the face of the mouth of the bell, a cap releasably engaging the aforesaid ring, the mouth of the bell
40 having an annular external recess, a ring seated in said recess, and wires having their ends inserted through apertures in the mouth of the bell and in said ring.

45 7. In a stethoscope, the combination of a bell having a sound conveying tube for engagement by a rubber tubing to the ear piece, a diaphragm, the bell being exteriorly threaded, an L-shaped ring engaging the diaphragm and having threaded engagement with the threaded portion of the bell to hold the diaphragm in contact with the face of the mouth of the bell, a cap releasably engaging the aforesaid ring, the mouth of the bell
50 having an annular external recess, a ring seated in said recess, wires having their ends inserted through apertures in the mouth of the bell and in said ring, said wires being disposed in the plane at right angles to the
60 sound conveying tube of the bell.

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