

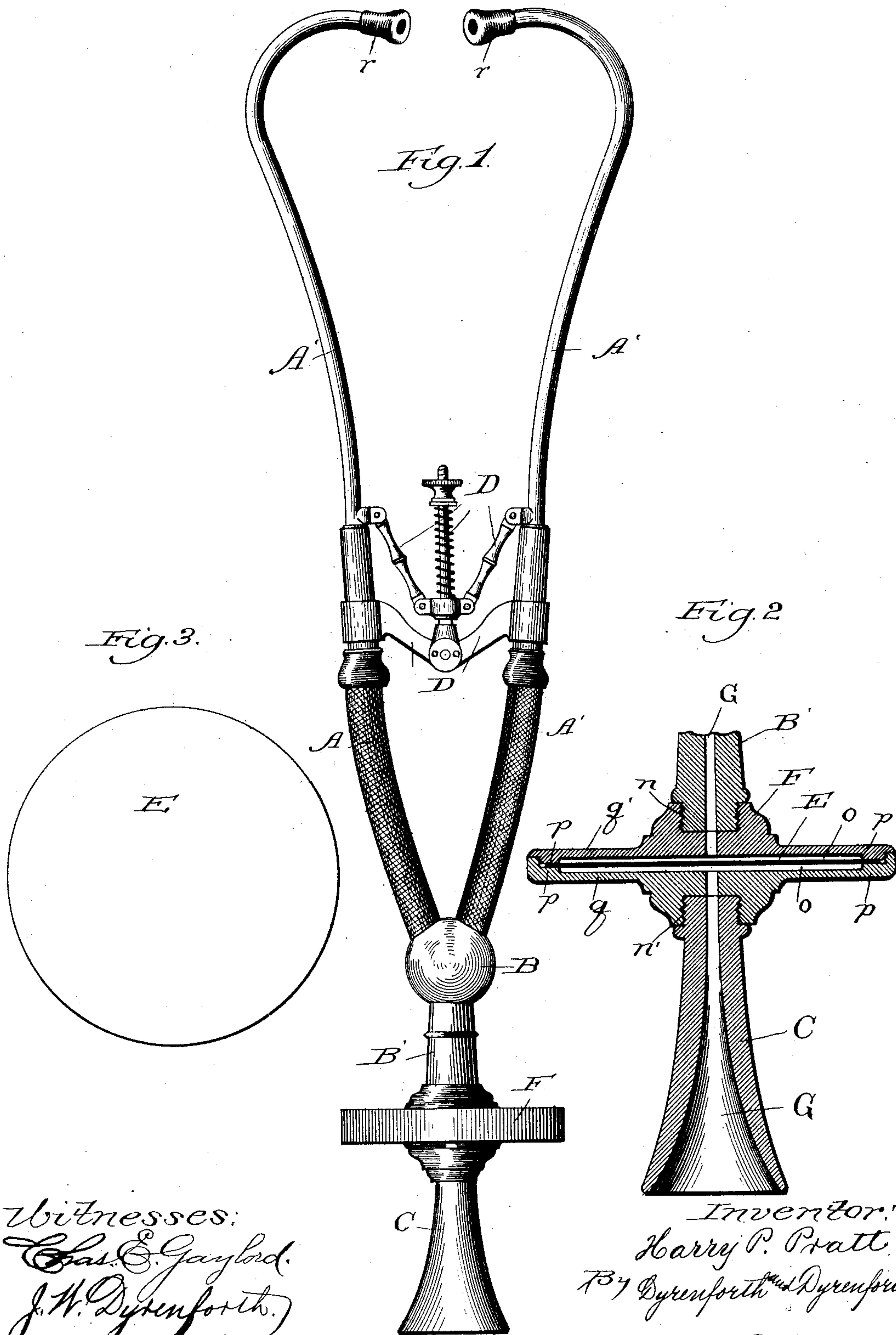
(No Model.)

H. P. PRATT.

STETHOSCOPE.

No. 370,711.

Patented Sept. 27, 1887.



Witnesses:
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UNITED STATES PATENT OFFICE.

HARRY P. PRATT, OF CHICAGO, ILLINOIS.

STETHOSCOPE.

SPECIFICATION forming part of Letters Patent No. 370,711, dated September 27, 1887.

Application filed July 27, 1886. Renewed July 11, 1887. Serial No. 244,033. (No model.)

To all whom it may concern:

Be it known that I, HARRY P. PRATT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Stethoscopes; and I hereby declare the following to be a full, clear, and exact description of the same.

Stethoscopes as heretofore constructed depend for the accomplishment of their purpose in the art of auscultation, broadly speaking, upon an unobstructed passage in the instrument between the ear or ears of the user and the part of the body under examination, the general principle of the operation of the instrument being that by shutting out external sounds those of the respiratory and vascular organs of the body may be recognized through the unobstructed passage.

It is my object to add to the instrument in any of the forms hitherto employed a feature whereby the sounds to be heard shall be augmented by concentration in a degree to render them more distinct and more readily discernible than has hitherto been possible with stethoscopes.

My invention consists in the construction hereinafter described and claimed.

In the drawings, Figure 1 shows a stethoscope in elevation provided with my improvement. Fig. 2 is a sectional view of the part constituting my improvement, and Fig. 3 a plan view of the diaphragm detail.

A is a bitubular stethoscope.

A' A' are the bent tubes or hollow arms, provided at each extremity with an ear-piece, *r*, and connected each at its opposite extremity with a flexible tube, A, the flexible tubes being inserted into a bulb, B, which communicates with the flaring tubular part C applied to the part of the body under examination, and commonly, in a form of stethoscope hitherto used, inserted by screwing into the bulb B, whereby an unobstructed passage, G, is afforded from the extremity of the flaring portion through the bulb and divided into the two passages in the bent tubes A' leading to the ends applied to the ears of the user of the instrument.

The foregoing features are all old, forming no part of my invention, and are to be found

in bitubular stethoscopes generally; and the adjustable spring and toggle-lever device D, for controlling the arms A, is also not new, and requires no particular description in the present connection.

My improvement comprises, in detail, the attachment, in the form of a flexible diaphragm, E, held around its edge between the two interlocking parts *q* and *q'*, of a preferably circular case, F, the parts being constructed, by preference, as shown, one with a male screw and the other with a female screw to receive the male portion, and each having a circular shoulder, *p*, between which shoulders the diaphragm, when inserted, is firmly held around its edge by screwing the parts *q* and *q'* together, to leave its opposite surfaces free to vibrate in the hollow or chamber *o* in the case.

The case F is provided at opposite sides with central threaded openings, *n* and *n'*, to receive, respectively, the threaded end of the tubular extension B from the bulb B and that of the flaring part C, whereby the diaphragm E is interposed across the passage G near the tapering end of the opening in the flaring tube, which tube, constituting, as it does, at its flaring extremity the receiving end of the sounds introduced into the instrument, concentrates the sounds upon the diaphragm, which by its vibrations transmits them to the receiving end of the instrument.

The diaphragm may be formed of thin metal or of any other suitable material, though I prefer to use a sheet of mica for the purpose, which produces highly satisfactory results in instruments now provided with my improvement.

It will thus be seen that the function of my improved instrument, which is to assist in auscultation by enabling even the otherwise indiscernible impulses of the more feebly-throbbing parts of the human body to be infallibly recognizable, depends for its accomplishment upon the flaring form of the tube C of the stethoscope, the inwardly-tapering passage through it, and the position of the diaphragm with relation to the passage, whereby, on applying the flaring mouth of the tube C to the region of the part at which auscultation is to be directed, the sounds will enter

the tube at the widest part of the same and become condensed in their passage to the diaphragm by the tapering form of the opening through the flaring tube.

5 What I claim as new, and desire to secure by Letters Patent, is—

In a bitubular stethoscope, the combination, with the bulb B for the branch tubes A' and flaring part C, of a case, F, formed in two
10 interlocking parts, q and q' , each provided with a central opening at which to connect,

respectively, the bulb and part C, a chamber, o , in the case, and a diaphragm, E, clamped to be held around its edge between the parts q and q' of the case and free to vibrate within
15 the chamber o , substantially as and for the purpose set forth.

HARRY P. PRATT.

In presence of—

HENRY HUDSON,

J. W. DYRENFORTH.