R. N. BAYLIS.

SOUND LOCATER.

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977,503.

Patented Dec. 6, 1910.

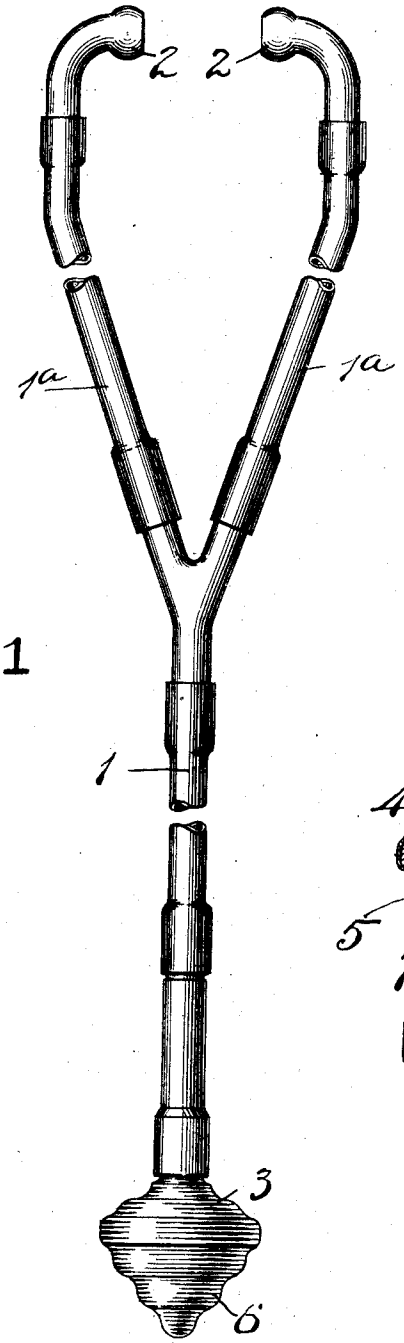

Fig 1

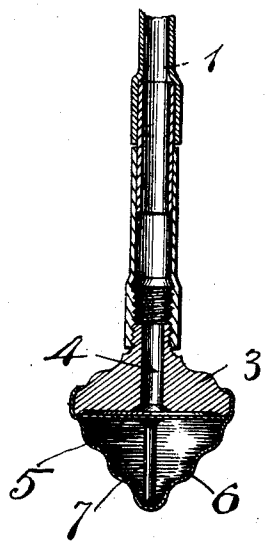

Fig 2

Witnesses:
Fred'k. W. Dannenfelser
Chas. F. Peaudy

Robert N. Baylis, Inventor,
By his Attorneys
Baxter, Brownell & Mitchell.

UNITED STATES PATENT OFFICE.

ROBERT N. BAYLIS, OF MONTCLAIR, NEW JERSEY.

SOUND-LOCATER.

977,503. Specification of Letters Patent. Patented Dec. 6, 1910.

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To all whom it may concern:

Be it known that I, ROBERT N. BAYLIS, a citizen of the United States, residing at Montclair, county of Essex, State of New Jersey, have invented certain new and useful Improvements in Sound-Locaters, of which the following is a full, clear, and exact description.

My invention relates to an apparatus for locating sound, the same being of particular utility when employed for locating trouble in motors, such for example as employed in automobiles.

It is well known that in the ordinary multiple cylinder motor it is only by expert effort and usually by a series of tests that many troubles can be accurately located. The multiplicity of duplicate parts, the relatively compact location of the same, and the high speed of the motor all operate to make this work exceedingly difficult and arduous. By my invention the exact location of any noise due to faulty operation or looseness of parts can be easily and quickly detected.

In the accompanying drawing Figure 1 is a view, partly broken away, of my so-called sound locater. Fig. 2 is a longitudinal sectional view of part of the same.

1 represents a sound conveying pipe or duct. This pipe is preferably provided with two tubular extensions 1^a—1^a, each of which carries at its free end an ear-piece 2. At the opposite end of the pipe 1 is what I will term the finder head in the form of a case which contains the sound magnifying apparatus and which is so shaped that it may be readily applied to any part of an engine and will make proper contact therewith whereby any sound at that point will be received, magnified and transmitted to the ears of the user. A preferable construction of the head is shown in the sectional view, Fig. 2, in which it will be seen that the head comprises the back or main body portion 3 having a sound passage 4 leading to the passage in the tube 1.

5 is a diaphragm mounted at its edge on the head portion 3, the middle part of said diaphragm being free from said head portion so that said diaphragm may be freely vibrated.

6 is the outer section of the head, which is preferably made of relatively thin material. This outer portion is secured to the main body portion 3 of the finder head in any suitable way, and this connection is preferably such that it serves as a means to hold the diaphragm against its seat. The outer section 6 of the finder head converges as it proceeds outwardly or away from the diaphragm.

7 is what I will term a coupling, the same being preferably in the form of a pin wholly inclosed within the space between the diaphragm 5 and the inner wall of the outer section 6 of the head. This coupling pin is suitably secured in place between the outer end of the head and the middle portion of the diaphragm, any suitable means for securing the pin in place being employed.

In use, the tip end of the outer section 6 of the finder head is placed against the motor. If the user has the ear-pieces 2—2 in place in his ears, he can at once detect the sounds immediately in front of the finder head, hence by shifting said finder head around from place to place he may locate with great accuracy and very quickly any objectionable or abnormal noise, thereby enabling him to at once ascertain the particular part of the motor that needs correcting. By completely inclosing the diaphragm 5 all stray external noises are guarded against, thus rendering more accurate and effective the operation of the instrument. By completely inclosing the coupling pin 7 all danger of injury to the same is avoided.

What I claim is:

In an apparatus of the character described for locating sounds in engines, a finder head including a case, a diaphragm inclosed and held therein, the wall of said case outside of said diaphragm being made of relatively thin material, and a coupling inclosed in the space between the diaphragm and the inner wall of the lower or outer section of said case and coupling said parts for the transmission of sound waves impinging against the external wall of the thin part of said case, the walls of said thin part converging toward the outer end of the coupling.

ROBERT N. BAYLIS.

Witnesses:
JAMES A. FORREST,
GRACE A. PIERCE.