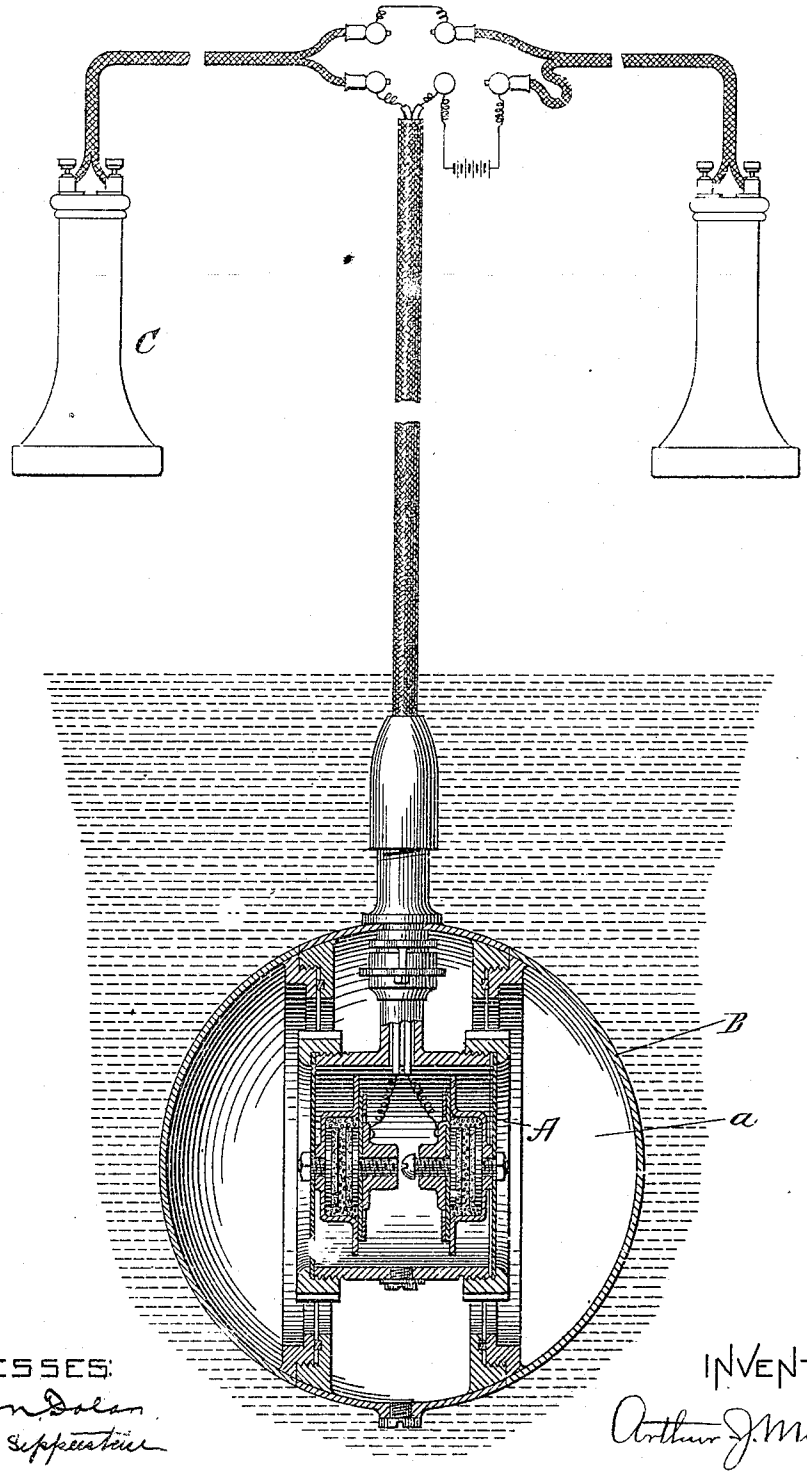
No. 868,880 PATENTED OCT. 22, 1907.

A. J. MUNDY.

SOUND TRANSMITTER AND RECEIVER.

APPLICATION FILED APR. 23, 1902.



WITNESSES:

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SOUND TRANSMITTER AND RECEIVER.

No. 868,880. Specification of Letters Patent. Patented Oct. 22, 1907.

Application filed April 23, 1902. Serial No. 104,296.

To all whom it may concern:

Be it known that I, ARTHUR J. MUNDY, of Boston, in the county of Suffolk and State of Massachusetts, a citizen of the United States, have invented a new and useful Improvement in Sound Transmitters and Receivers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The invention relates to an improvement in sound transmitters and receivers especially adapted for use in submarine signaling in which the signal impulses or vibrations are transmitted to water and transferred by it from the signal station to the transmitter. It involves the essential elements of application No. 104295 filed of even date herewith, and varies therefrom in that the sound-focusing and protecting case or shell containing the electrical transmitter is filled with air or other medium varying from the medium receiving and transferring the sound vibrations, or in other words, the water in which the shell is submerged.

I will now describe the invention in conjunction with the drawings forming a part of this specification, where the figure is a view partially in section and partially in elevation of my improved apparatus.

Referring to the drawings:—A represents the electrical transmitter. It is contained within the cavity *a* of the focusing shell B, which preferably is spherical. Any form of electrical transmitter may be employed. I prefer that represented in my application for Letters Patent of the United States, executed of even date herewith, Case B, or that represented in my application of the same date, Case F. The transmitters are connected with the receiver C as therein described.

The shell B acts to receive the sound vibrations from the water and to focus them upon the diaphragms of the transmitters and also by molecular action to transfer them to the means for varying electrical resistance actuated by the diaphragms.

The chamber *a* is filled with air, or any other medium, under any desired pressure, which varies from the sound-transmitting medium, and which may also be admitted to the chamber of the transmitter within the diaphragms whereby the pressure in the chamber *a* outside the diaphragms and the pressure between the diaphragms will be of the same weight or value and will therefore leave the diaphragms equally balanced so far as relates to the pressure of their surrounding medium. Air or gas contained in the case has a resiliency or compressibility which is not possessed by the medium in which the case is submerged.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States:—

1. An electric sound transmitter, a sound focuser arranged in relation to the diaphragm of the transmitter to focus sound vibrations thereon, and an interposed, compressible, sound-carrying medium in contact with said focuser.

2. An electric sound transmitter, a sound focuser arranged in relation to the diaphragm of the transmitter to focus sound vibrations thereon and to act as an inclosing shield therefor, and an interposed, compressible, sound-carrying medium.

3. An electric sound transmitter having two or more receiving diaphragms, a sound focuser for each diaphragm, arranged to focus sound vibrations thereon, and an interposed, compressible, sound-carrying medium in contact with said focusers.

4. An electric sound transmitter, a means for focusing sound vibrations upon any part thereof, and an interposed, compressible, sound-carrying medium.

5. An electrical sound transmitter, means for focusing sound vibrations upon each side thereof, a compressible sound-carrying means located between said focusing means and said transmitter and in contact with both sides of said transmitter, as set forth.

6. An electric sound transmitter, means for focusing sound vibrations upon the transmitter at substantially all angles thereto, and an interposed, compressible, sound-carrying medium.

7. An electric sound transmitter, a sound focuser arranged to focus sound vibrations upon a part of the transmitter other than its diaphragms, and an interposed, compressible, sound-carrying medium.

8. An electric sound transmitter, a shell inclosing the same, parts of which act as a sound focuser, and an interposed, compressible, sound-carrying medium.

9. A submerged electric sound transmitter, the same comprising a case or shell adapted to receive, focus and transmit sound vibrations and provided with means whereby it may be suspended or held in the water, and an electric transmitter contained in the chamber of the shell and having a compressible, sound-carrying medium interposed between it and the shell.

10. A submerged electric sound transmitter, the same comprising a case or shell adapted to receive, focus and transmit sound vibrations and provided with means whereby it may be suspended or held in the water, and an electric transmitter contained in the chamber of the shell and having a sound-carrying medium varying from water interposed between it and the shell.

11. A transmitter in an elastic medium in combination with an embracing wave-focusing means beyond said medium.

12. A transmitter in an elastic medium in combination with focusing means for sealing said transmitter and medium.

13. A wave receiving and transmitting means comprising in combination with an inclosed, elastic medium, a transmitter and wave-focusing means inclosing said medium.

14. A wave receiving and transmitting means compris-

ing in combination with an interposed, elastic medium a transmitter and a shell to focus impinging waves upon various parts of the transmitter.

15. In combination an electrical sound transmitter, means for focusing sound vibrations upon both sides thereof, and means surrounding said transmitter and isolated from the medium in which said focusing means and parts connected therewith are suspended and differing from said medium, as described.

16. In combination an electrical sound transmitter, means for focusing sound vibrations thereupon, and means surrounding said transmitter and isolated from the medium in which said focusing means and parts connected therewith are suspended and differing from said medium, as described.

17. In combination a casing, an electrical sound transmitter located within said casing, and inclosing means for focusing sound vibrations thereupon, as described.

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Witnesses:
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