No. 630,990. Patented Aug. 15, 1899.

C. SALMOND.

SOUND INDICATOR.

(Application filed Sept. 6, 1898.

(No Model.)

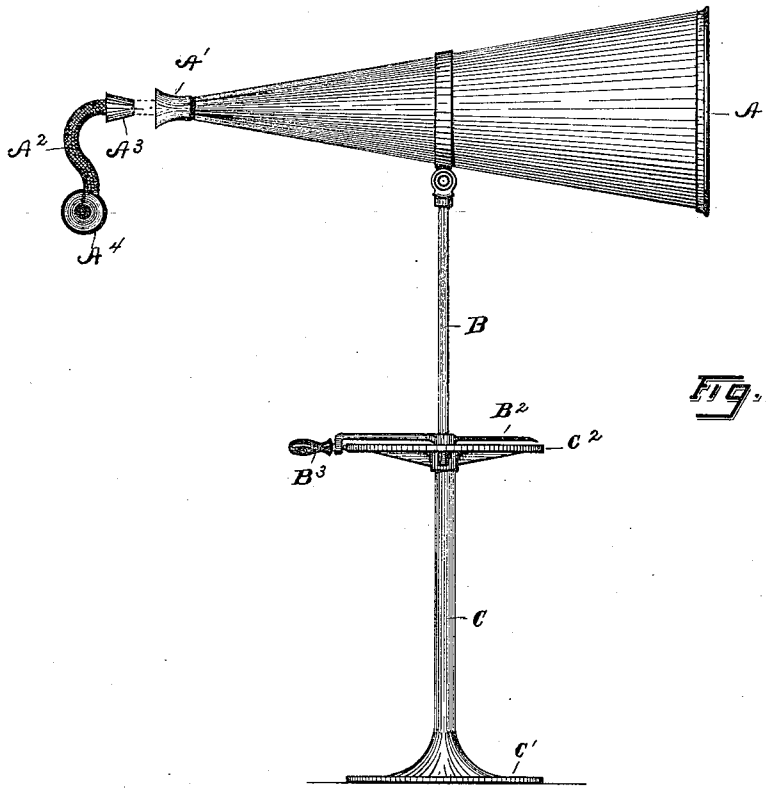

Fig. 1.

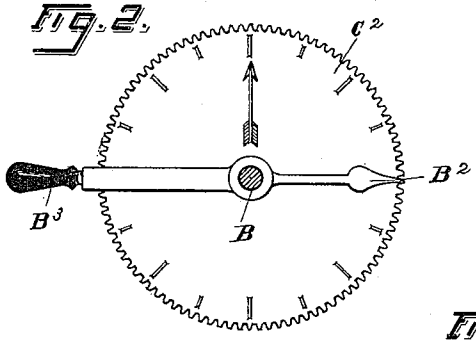

Fig. 2.

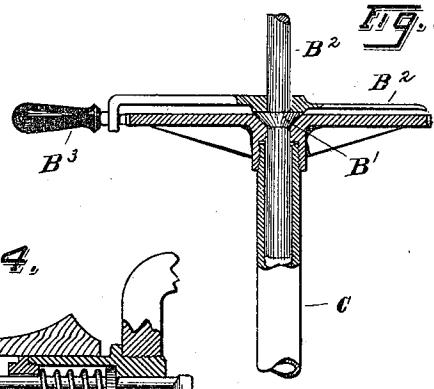

Fig. 3.

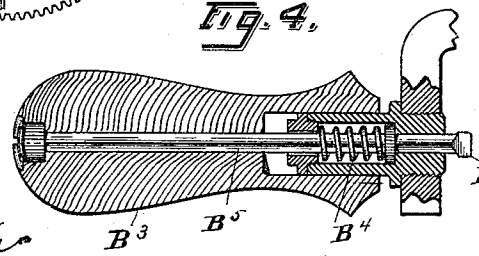

Fig. 4.

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UNITED STATES PATENT OFFICE.

COLIN SALMOND, OF SAN FRANCISCO, CALIFORNIA.

SOUND-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 630,990, dated August 15, 1899.

Application filed September 6, 1898. Serial No. 690,365. (No model.)

To all whom it may concern:

Be it known that I, COLIN SALMOND, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Sound-Indicators; and I do hereby declare the following to be a full, clear, and exact description of said invention, such as will enable others skilled in the art to which it most nearly appertains to make, use, and practice the same.

This invention relates to improvements in sound-indicators; and it consists in the novel construction and arrangement of the parts, as hereinafter set forth.

In the drawings, Figure 1 is a side elevation of the invention. Fig. 2 is a plan view of the indicator, the receiver being removed. Fig. 3 is a vertical section of a segment of the standard, taken on a central line through the graduated disk. Fig. 4 is a detail view in section, showing the construction of the handle for releasing, locking, and rotating the lever.

The instrument herein shown and described is particularly designed for use upon vessels during foggy weather or in the night. It consists in a trumpet-like receiver A so constructed as to gather the sound-waves and concentrate them at the small end after the manner of the megaphone or speaking-trumpet. This receiver is mounted in a hinged joint upon a vertical shaft B, the lower end of which is adapted to fit within the top of a hollow tube or standard C. The standard C is here shown as provided with a foot or base C′, which may be securely fastened upon the deck or bridge of a vessel.

The standard C is provided with a graduated disk C^2, upon the surface of which are marked various divisions, preferably in conformity with compass-markings. The principal marks or the zero-marks are placed parallel with the keel of the ship when the standard C is secured in position. The shaft B is provided with a cone-shaped collar B′ to prevent its further insertion into the standard C and to form an easy bearing for the shaft B.

Mounted rigidly upon the shaft B, in line with the hinge for the receiver or in line with the receiver itself, is a pointer B^2. This pointer is so placed that when the shaft B is mounted on the standard C the pointer rests just above the disk C^2. The rear extension of the pointer is provided with a handle B^3, with which it is designed to rotate the shaft B and the receiver A.

When there is more or less draft or movement of air produced by the motion of the vessel, it is desired to lock the instrument in its position when the direction of the sound is ascertained or at other times to prevent its moving with the air. For this purpose the handle B^3 is mounted in bearings in the rear end of the pointer B^2, and a spiral spring B^4 is provided adapted to draw the handle B^3 toward the center of the disk C^2. A rod B^5, which is passed through the bearings, is provided in the end with a tooth B^6, the office of which is to engage the serrations or teeth cut in the edge of the disk. This serves as a lock for the device in all of its positions.

The receiver A, I have designed to perform the double function of receiver and trumpet, or, in other words, to hear with or to speak through. For this purpose I have provided the instrument with the mouthpiece A′ of the ordinary trumpet shape. When used as a receiver, I connect to this end a short length of flexible tubing A^2 by means of the plug A^3, formed on the end thereof. Upon the other end of the flexible tube is provided an ear-cap A^4. I find the double use to which this instrument can be put of great advantage, particularly in ships of considerable size, for in many instances, particularly in high wind, the report from the lookout at the bow cannot ordinarily be heard with the naked ear, nor can the repetition of the order be heard by him in response. Both, however, can be easily accomplished by means of this invention, as the officer to whom the report is made can by listening through the receiver distinctly hear the report and by removing the flexible tube A^2 and speaking through the receiver A transmit his response or order distinctly to the lookout in the bow.

In its operation as a sound indicator or finder the instrument is generally used as follows: Passing through a fog, the sound of a steam-whistle is heard and it is very important to ascertain, if possible, the exact location from which the sound emanates. If it is a shore-signal, the navigator by obtaining his exact direction may ascertain, by what is known to the

mariner as the "four-point" measurement, his exact distance off the shore and also his exact location on the chart. If it is the whistle of an approaching steamer, he may ascertain on which bow she is approaching and make his answering-signals accord. Having this instrument mounted in position, the officer on watch places the ear-cap over his ear and grasps the handle B^3, ready to sweep the receiver around in the general direction of the sound the instant he catches it the second time. To move the instrument, he draws the handle outward and when the sound starts he may sweep the receiver about until he ascertains the point at which he gets the sound clearest and in largest volume. He may then release the handle, so as to allow the tooth B^6 to strike in the teeth of the disk C^2 to hold the instrument steadily in position. He is now at leisure, without fear of the instrument shifting, to mark the point of deviation of the sound with reference to his course. This may be repeated several times to ascertain the correctness of his observation.

I have found by the use of this instrument that the sound comes full and clear only when the instrument is turned directly toward the object from which the sound emanates. The variation of a few points is distinctly perceptible.

By means of the construction herein shown the receiver and its standard may be readily unshipped and stowed away during the times when it is not desired for use and as readily and easily replaced in position when so desired. By the use of an instrument of the construction herein shown the sound is not only located, but intensified, and its use in navigation would secure to the navigator the additional advantage of being able to perceive sounds at greater distances and before they would become perceptible to the natural hearing.

Having thus described this invention, what is claimed is—

1. A sound-indicator comprising a hollow standard, a graduated disk secured upon the end thereof, a shaft passing through an opening in the disk and entering the standard, said shaft being rotatable in said disk and standard, a sound-receiving instrument mounted upon said shaft, and a member having an opening therein through which the shaft passes, said member being fixed to the shaft to turn therewith and having upon one end a pointer coöperating with the disk and upon its other end a handle for operating the shaft; substantially as described.

2. In a sound-indicator, a trumpet-like sound receiving and transmitting member provided with a mouthpiece, an earpiece, a flexible tube upon said earpiece, and a tapering plug upon said tube adapted to detachably fit the mouthpiece of the trumpet-like member; substantially as described.

In testimony whereof I have hereunto set my hand this 13th day of August, 1898.

COLIN SALMOND.

Witnesses:
E. F. MURDOCK,
M. H. HARMS.