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SOUND PRODUCING DEVICE FOR FOG SIGNALING, POSITION LOCATING, OR THE LIKE.

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1,175,656.

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Fig. 1.

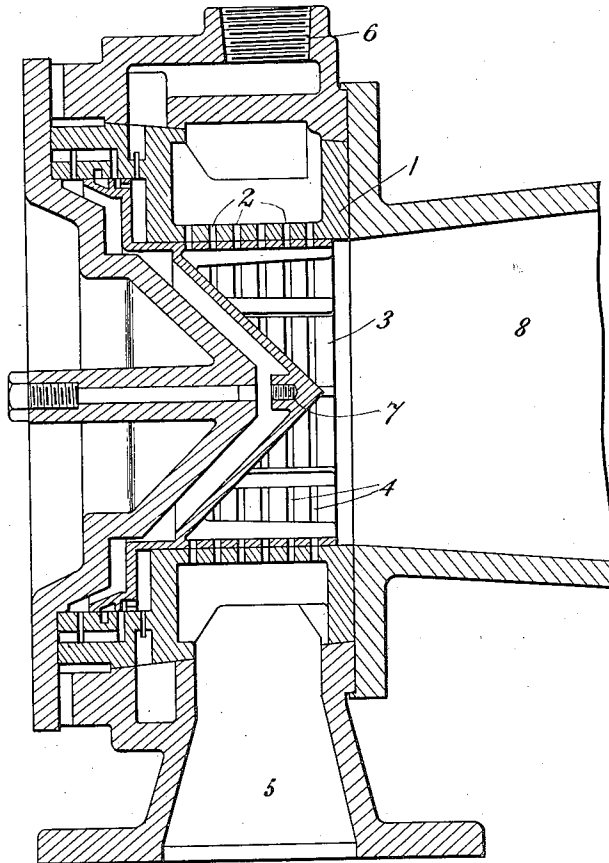
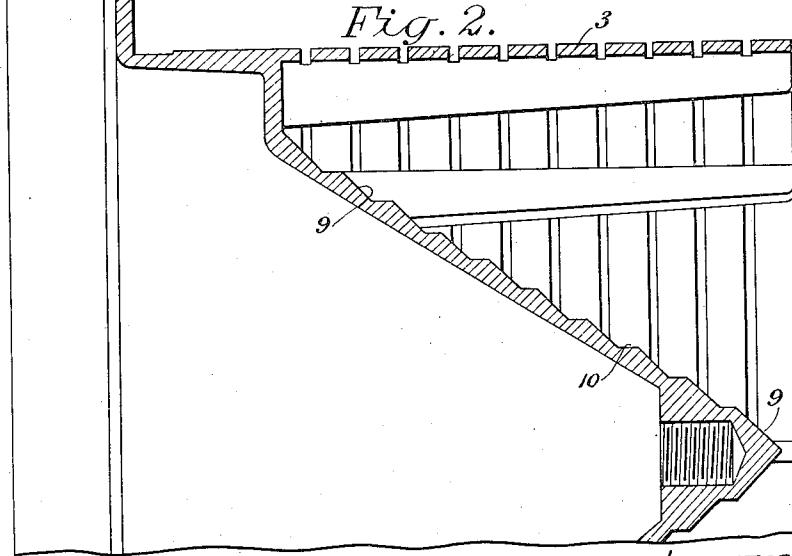


Fig. 2.



WITNESSES.

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SOUND-PRODUCING DEVICE FOR FOG-SIGNALING, POSITION-LOCATING, OR THE LIKE.

1,175,656.

Specification of Letters Patent. Patented Mar. 14, 1916.

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To all whom it may concern:

Be it known that I, JOHN PELL NORTHEY, a subject of His Majesty the King of Great Britain and Ireland and Isle of Man, and a resident of Toronto, Canada, have invented certain new and useful Improvements in Sound-Producing Devices for Fog-Signaling, Position-Locating, or the like, of which the following is a specification.

This invention relates to improvements in sound-producing devices for fog signaling, position locating, or the like, and has particular reference to the type in which the sounds are produced by fluid forced through circumferential or other slots or slits in a cylinder, the passage of the fluid being interrupted by a hollow reciprocating or vibrating piston having corresponding slots or slits. It has been found in this class of device that the sound waves are impaired owing to the fact that they are directed radially inward within the hollow piston where they meet and are partially broken or interrupted.

The object of the present invention is to improve the note, and to this end it is proposed to employ deflectors in such a manner that the sound waves are deflected in an axial direction toward the open end of the hollow piston. The deflector may take the form of a cone the base of which is disposed adjacent the closed end of the piston and the apex directed toward the open end of the piston. A number of circular steps are formed on the cone and these steps are each arranged at an angle of approximately 45° to the axis of the piston.

In order that the invention may be more readily understood reference is made to the accompanying drawings.

In these drawings:—Figure 1 is a sectional elevation partly broken away of a sound producing device: and Fig. 2 is a sectional elevation of part of the hollow piston portion of same but modified to show the present invention.

Referring to the drawings, and particularly to Fig. 1, the principal portion of the sound producing device shown is of well known construction and comprises a cylinder 1 having circumferential slots 2, and a hollow piston 3 provided with corresponding slots 4. Air under pressure for causing

the sound is admitted to the cylinder slots through an opening 5 and air under pressure for driving the piston is admitted through an opening 6 all in the well known manner. The piston 3 reciprocates within the cylinder under the influence of the driving air pressure, and the air forced through the slots in the cylinder is thereby interrupted, thus resulting in the sounds being made that are peculiar to this type of device. In devices of this kind as heretofore constructed the streams of air passing radially inward through the slots meet and are partially broken up or interrupted thus interrupting or breaking the sound waves with the result that the note is impaired. This defect is avoided by providing internally of the piston a conical deflector 7 the apex of which is directed toward the open end of the piston. This deflector serves to deflect the air streams and sound waves toward the resonator 8 and it has been found that the best results are obtained when the deflecting surface of the deflector is disposed approximately at an angle of 45° to the direction of the slots as shown.

In cases where the piston is of such length that the apex angle of the conical deflector would be less than 45° if the cone was extended throughout the whole length of the piston, the same result may be obtained by forming the cone with a stepped wall the faces between each step being at an angle of 45° . Such a construction is shown in Fig. 2, where it will be seen that the part 9 of the cone that is in alinement with a slot is inclined at an angle of 45° and the stepped portions 10 are disposed between the slots.

What I claim is:—

1. A sound producing device comprising in combination, a cylinder with openings therein, a hollow piston mounted in said cylinder having openings in its walls and a closed end, means for admitting operating fluid to said cylinder and piston and a series of deflecting faces inclined approximately at an angle of 45° to the axis of the piston.

2. A sound producing device comprising in combination, a cylinder with openings therein, a hollow piston mounted in said cylinder having openings in its walls and a closed end, means for admitting operating

fluid to said cylinder and piston and a series of deflecting faces inclined approximately at an angle of 45° to the axis of the piston and arranged in a stepped conical formation.

5 3. A sound producing device comprising in combination, a cylinder with openings therein, a hollow piston open at one end and circumferentially slotted mounted in said
10 cylinder and a conical deflector having a

stepped face arranged in said piston with its base toward the closed end thereof.

In witness whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN PELL NORTHEY.

Witnesses:

THOMAS PAGE WADSWORTH,
JANET MACKENZIE.