(No Model.)

P. TOPPEL.

FOG HORN.

No. 259,782. Patented June 20, 1882.

Fig. 1.

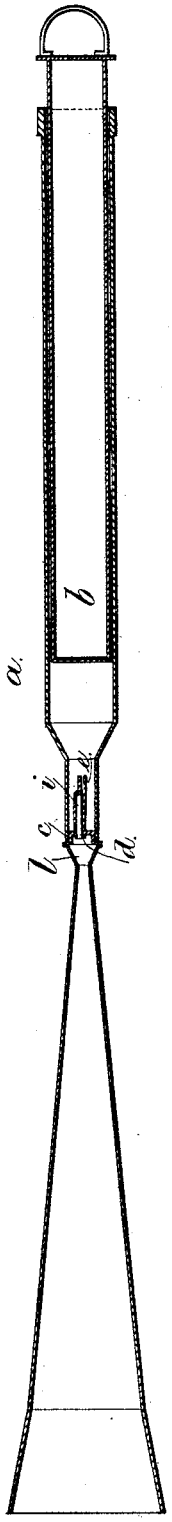
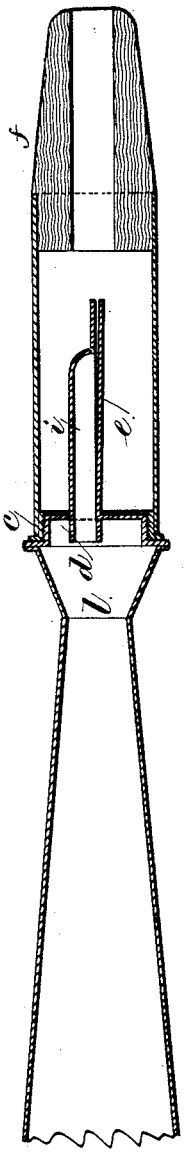


Fig. 2.



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UNITED STATES PATENT OFFICE.

PETER TOPPEL, OF JERSEY CITY, ASSIGNOR TO ROBERT FOULDS, OF PASSAIC, NEW JERSEY.

FOG-HORN.

SPECIFICATION forming part of Letters Patent No. 259,782, dated June 20, 1882.

Application filed January 16, 1882. (No model.)

To all whom it may concern:

Be it known that I, PETER TOPPEL, of Jersey City Heights, in the county of Hudson and State of New Jersey, have invented an Improvement in Fog-Horns, of which the following is a specification.

Fog-horns have been made with a vibrator or tongue of thin sheet metal resting against a hollow case, and these have been fastened into a circular base, from the edges of which base the trumpet-shaped tube projects. These fog-horns have been blown by a plunger acting within a sheet-metal tube. Toy musical instruments have been made with a harmonica with numerous notes upon a casing that is connected to the trumpet. Fog-horns have been made of a whistle or horn attached to the flat end of a cylinder in which is a piston moved by a rack and pinion, and the horn has been screwed to the cylinder or to a mouth-piece; but the base of the vibrator has either been soldered directly to the horn or else there has been a double conical expanding chamber between the vibrator and the horn. In fog-horns of this character the primary vibrations from the tongue are not concentrated, and the air as it issues through the vibrator has to expand before it reaches the interior of the trumpet portion of the horn. Hence a large portion of its resonant effect is lost and the fog-horn has an indistinct and muffled sound. This is particularly the case in the ordinary fog-horns used on sailing-vessels, and which are usually made of common sheet-tin.

My present invention relates to the combination, with the vibrating tongue and base, of a conical concentrator intervening between the base and the flaring horn or trumpet, whereby the primary atmospheric vibrations due to the tremulous movement of the tongue are concentrated upon the base of the trumpet and impart to the same a vibration which sets the air in motion, producing a loud distinct sound that can be heard a long distance in a fog.

In the drawings, Figure 1 is a longitudinal section of the fog-horn complete; and Fig. 2 is a section, in larger size, of the concentrator and mouth-piece.

The air-forcing cylinder *a* is made of sheet metal, with a sheet-metal plunger, *b*, around which, near the end, there is a winding of fibrous material to form a packing. The plunger *b* is closed at the end, so as to act in expelling the air. The cylinder *a* is contracted to the screw-coupling *c*, and there is a corresponding screw, *d*, around the base of the primary vibrator *e*, so that the two parts can be screwed together, or a mouth-piece, *f*, be screwed at the base *d*, when it is desired to blow the fog-horn by the mouth, instead of using the air-forcing cylinder and plunger.

The primary vibrator is made of the tongue *e*, that lies flat against the side of a hollow or trough-shaped case, *i*. The ends of both the tongue and case pass through the base *d*.

Instead of attaching the horn or trumpet directly to the edges of the base *d*, as has heretofore been done, I introduce the conical concentrator *l* between the edges of the base and the trumpet, and the inner end of the trumpet is reduced in size to correspond with the small end of the concentrator, and the two are soldered firmly together. The result of this construction is that the air which is set in vibration by the tongue acts directly at the apex of the trumpet and gives a distinct and musical sound that is adapted to be heard at a long distance.

I claim as my invention—

1. The combination, with the fog horn or trumpet and the vibrator, of a conical concentrator with its larger end soldered to the base of the vibrator and its smaller end to the small end of the horn, substantially as set forth.

2. The improved fog-horn, composed of the air-forcing cylinder, a close-ended plunger, a screw-connection, a vibrator, a horn, and a conical concentrator between the base of the vibrator and the small end of the horn, substantially as set forth.

Signed by me this 9th day of January, A. D. 1882.

PETER TOPPEL.

Witnesses:
GEO. T. PINCKNEY,
WILLIAM G. MOTT.