

Jan. 2, 1923.

V. C. ROCHOLL.
WHISTLE.
FILED MAR. 31, 1922.

1,440,698.

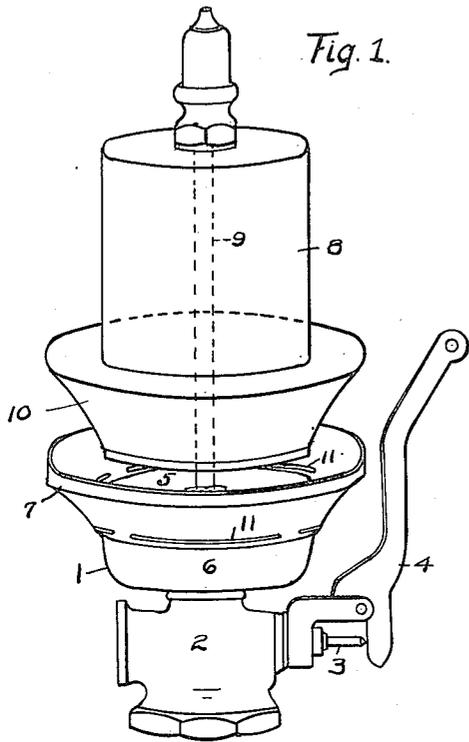


Fig. 1.

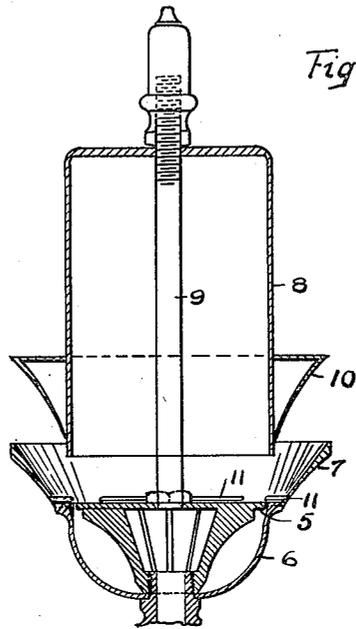


Fig. 2.

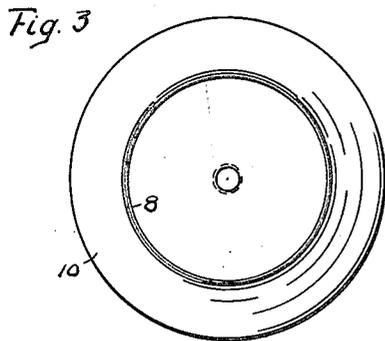


Fig. 3.

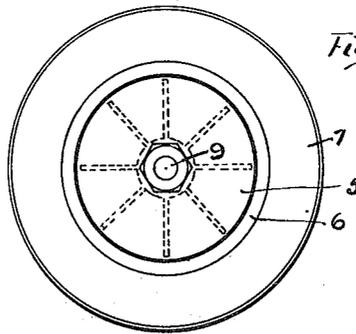


Fig. 4.

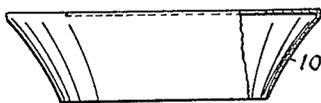


Fig. 5.

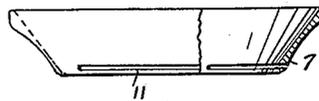


Fig. 6.

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UNITED STATES PATENT OFFICE.

VALENTINE C. ROCHOLL, OF FORT WAYNE, INDIANA.

WHISTLE.

Application filed March 31, 1922. Serial No. 549,357.

To all whom it may concern:

Be it known that I, VALENTINE C. ROCHOLL, a citizen of the United States, residing at Fort Wayne, in the county of Allen and State of Indiana, have invented new and useful Improvements in Whistles, of which the following is a specification.

The invention relates to whistles adapted to be operated by steam, compressed air or gas.

Many grade crossing accidents are attributed to the failure of the traveller to hear the whistle of an approaching locomotive or electric car and oftentimes on a railroad where two locomotives are used to pull a train the engine crew on the head engine will not hear the whistle on the second engine. This failure to hear the whistle is due to the destruction of the forwardly projected sound waves caused by the lack of resiliency of the air forwardly of the whistle. The resiliency of the air is destroyed by exhaust steam, burned gases, smoke and fog, which combination of artificial and natural sound resisting elements, combined with the head resistance of the onrushing locomotive has a tendency to and does destroy all forward sound waves. On a foggy or humid day the exhaust steam, burned gases and smoke ejected from the stack of a locomotive do not rise quickly but often seem to travel directly toward the whistle. The resiliency of the air in front of the whistle is thereby destroyed and the forward sound waves of the whistle are instantly broken up or destroyed. Hence a person in front of the oncoming locomotive under the conditions just set forth will seldom hear the whistle when blown.

The object of my invention is to provide a whistle by which the above mentioned difficulties shall be eliminated, and I accomplish the invention by a device having means to project the sound waves upwardly from the whistle into the strata of resilient air above that through which the whistle is travelling, in which strata the sound waves will travel without obstruction.

In the accompanying drawings I have illustrated an embodiment of the invention in which Figure 1 is a perspective view of a whistle provided with the invention; Fig. 2 a vertical central section of the same; Fig. 3 a bottom view of the bell; Fig. 4 a plan view of the base with the guard thereon; Fig. 5 an elevational view of the directing

cone and Fig. 6 an elevational view of the guard.

Referring to the embodiment of the invention illustrated in the drawings, 1 is the base of the whistle of usual construction and mounted on the casing 2 of the valve 3 adapted to be operated by the lever 4 in the usual manner. In the type of base illustrated in the drawings the fluid under pressure enters the base and escapes through the annular space between the plate 5 and the adjacent wall of the cup member 6 of the base. The base illustrated in the drawings forms no part of my invention, hence it is unnecessary to further describe it. A guard 7 is secured to or is integrally formed with the cup member 6. It flares outwardly from the upper edge of the latter member, the angle of inclination from the perpendicular being that which will best accomplish the results to be obtained, as hereinafter described.

The usual bell 8 is adjustably supported on the rod 9 suitably secured in the base 1, the adjustment being in a vertical direction in order to regulate the elevation of the lower end of the bell with respect to the base. The plane of the lower end of the bell is below the plane of the upper edge of the guard so that the guard shall protect the said edge from the rapid air currents and the exhaust steam and gases ejected from the stack of a locomotive, when the whistle is used thereon. An inverted cone-shaped sleeve 10 is secured to the exterior surface of the bell at a suitable point above the lower end of the bell. The lower edge of the sleeve is feathered to prevent any obstruction to the sound waves at said edge. The outer face of the sleeve is concaved vertically, and the sleeve in cooperation with the guard direct the sound waves upwardly and outwardly. The guard 7 and the directing sleeve 10 are preferably made separately so that they may be attached to the base and bell of whistles already in use; but it is apparent that in new whistles made with the improvement, the guard may be formed integrally with the base and the directing sleeve in like manner may be formed integrally with the bell.

Since the directing sleeve member and the guard cooperate to direct the sound waves produced when the whistle is blown in an upward and outward direction, the waves travel into an upper strata of air above that

occupied by the fluids ejected from the stack whose resiliency has not been interfered with. The sound waves travel in the latter strata in all directions and a person ahead of the whistle may hear it as well as one behind it or at either side.

The slots 11 are formed in the lower portion of the guard 7 and provide a circulation of air over the upper edge of the guard, and out through the slots. This is provided so that the fluid under pressure shall have free escape and not be affected in any way by air currents or pockets in the vicinity of the base.

15 What I claim is:

1. A whistle comprising a base, a bell supported on the base and cooperating means on the bell and base for directing the sound waves produced, in an upward and outward direction.

20 2. A whistle comprising a base, a bell supported on the base, a sound wave directing member on the bell, and an annular guard

on the base adapted to cooperate with the directing member to cause the sound waves produced when the whistle is blown to travel upwardly and outwardly from the whistle.

3. A whistle comprising a base, an annular guard on the upper edge of the base which flares outwardly, a bell supported on the base and a member on the bell having its outer face concaved vertically and adapted to direct sound waves upwardly.

4. A whistle comprising a base, an annular outwardly flaring guard secured to the upper edge of the base, a bell adjustably supported on the base, a sleeve secured to the outer wall of the bell having its outer face curved or concaved in a vertical direction, the sleeve and guard being adapted to cooperate to direct upwardly and outwardly the sound waves produced by the whistle.

In witness whereof I have hereunto subscribed my name this 30th day of March, 1922.

VALENTINE C. ROCHOLL.