

W. A. HEYER.
WHISTLE.
APPLICATION FILED MAR. 4, 1918.

1,315,019.

Patented Sept. 2, 1919.

Fig. 1.

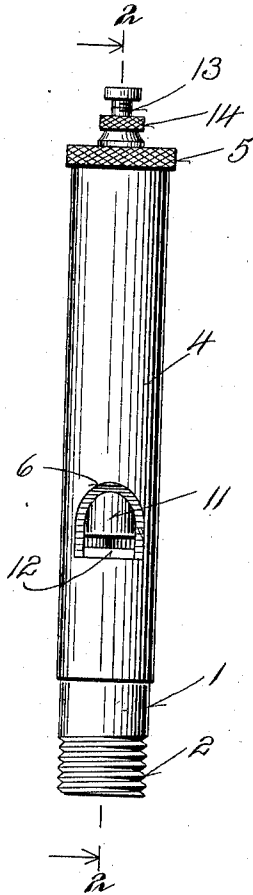


Fig. 2.

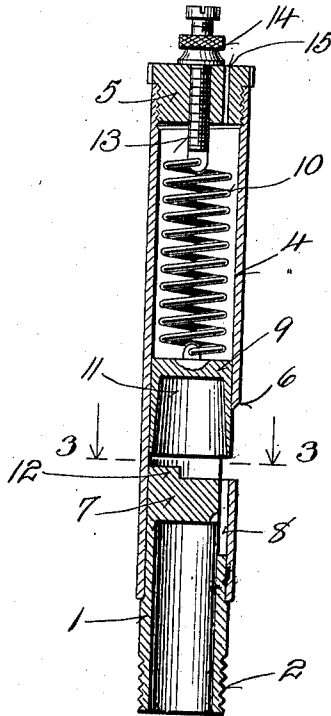
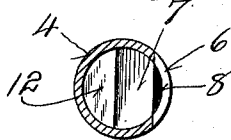


Fig. 3.



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WHISTLE.

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To all whom it may concern:

Be it known that I, WILLIAM A. HEYER, a citizen of the United States, and resident of Jones Island, Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Whistles; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention refers to new and useful improvements in whistles, particularly those which are adapted to be operated by steam or other fluid under pressure.

In the case of the majority of whistles now in use, it is impossible to effectively operate the same unless the compressed actuating fluid is under the required pressure. In other words each individual whistle is set to sound when fluid of a specified pressure is forced therethrough. Consequently if the pressure falls below this specified amount or increases beyond it, the whistle will be inoperative.

It is the principal object of the present invention, therefore, to provide a whistle which will automatically regulate itself to the pressure of the actuating fluid so that it will sound under all conditions. The advantages of such a whistle are obvious.

With this and additional objects in view the invention consists in certain novel features of construction, combination and arrangement of parts which will be hereinafter more particularly described and claimed and shown in the drawing wherein:

Figure 1 represents an elevational view of a whistle constructed in accordance with my invention.

Fig. 2 is a vertical sectional view taken on the plane of the line 2—2 of Fig. 1.

Fig. 3 is a horizontal transverse section on the plane of the line 3—3 of Fig. 2.

As hereinbefore mentioned the improved whistle is adapted to be actuated by any suitable fluid under pressure, and consequently may be connected with any suitable source of supply. For this purpose the device includes a tubular attaching portion 1, the lower end of which is screw-threaded as at 2 and the upper end is externally reduced as shown at 3.

The operating parts of the whistle are inclosed within a cylindrical tubular barrel 4 which is substantially the same diameter throughout its length and is open at both ends. The lower end is designed to be dis-

posed on the reduced end 3 of the attaching portion 1 and secured thereto, the other end being internally screw-threaded to receive a closure plug 5. The barrel 4 is also provided with the usual mouth or fluid outlet 6 which is cut with one wall adjacent the upper end of the tubular attaching portion 1. Said upper end of the tubular attaching portion is nearly closed by a filler 7 preferably formed integrally with the wall thereof, a passage-way 8 being provided by a recess formed in the wall of said attaching portion. The actuating fluid is forced out of the tubular attaching portion 1 through the passage-way 8 and into the barrel 4 to thus sound the whistle.

A whistle constructed of the parts hereinbefore mentioned will operate only when the pressure of the actuating fluid is between certain limits. In order that the device may operate under all conditions I provide means for varying the area of the barrel 4 between its upper end and the filler 7. This is accomplished by disposing a piston 9 within the barrel 4 and mounting the same on the lower end of an expansion helical spring 10, the upper end of which is carried by the closure plug 5. Normally the piston is disposed adjacent the lower end of the barrel so that the whistle will operate under light fluid pressure, but as such pressure increases, the piston will be automatically raised against the tension of the spring 10 to thereby increase the area of the space occupied by the actuating fluid. Thus it will be seen that upon each fluctuation of the fluid pressure the piston will be raised or lowered in the barrel.

The actuating fluid is supplied through the attaching portion from any convenient source. When the fluid pressure is light only a small outlet mouth from the barrel is needed for the escape of the actuating fluid. Therefore the piston 9 is provided with a depending annular apron 11 which extends over the mouth 6 and partially closes the same, said apron being beveled to afford the usual knife edge lip of the whistle. When the pressure is great the apron will obviously be moved above the mouth 6. The filler 7 is provided with a raised portion or stop 12 which is disposed above the bottom of the mouth 6 and is adapted to be engaged by the lower edge of the apron 11 to limit the downward movement thereof and thus prevent complete closure of said mouth.

The piston is manually regulated with respect to the filler 7 by the vertical movement of a screw 13 to the inner end of which the spring 10 is attached. This screw is threaded through the closure plug 5 and is locked in adjusted positions by lock nut 14. A vent 15 in the closure plug 5 prevents compression of the air within the barrel 4 by the upward movement of the piston.

10 From the foregoing description taken in connection with the accompanying drawing, it will be seen that a very simply constructed automatic whistle has been invented. Such whistle will be found to be very advantageous when used in connection with machines in which the fluid pressure is continuously varying. Various minor changes may be made in the form and proportion of the several parts to permit the device to be used in connection with machines of various types.

Having thus described my invention, what I claim as new is:

25 1. A whistle including a sound producing chamber, an inlet for actuating fluid, a beveled lip spaced from said inlet and engageable by fluid therefrom, and means operable automatically by variation of pressure of said actuating fluid for varying the distance of said beveled lip from the said inlet.

30 2. A whistle including a barrel provided with an opening at one end portion, an inlet for actuating fluid at said end portion of

the barrel, a beveled lip member movable across the opening, and means for urging said beveled lip member toward the fluid inlet yieldable automatically upon and by variation of pressure of said actuating fluid. 35

3. A whistle including a barrel provided with an opening in its side adjacent one end portion, an inlet for actuating fluid at said end portion of the barrel, a piston slidable in the barrel, means yieldably urging the piston toward the fluid inlet whereby the piston will move in the chamber upon variation of pressure of fluid issuing from said inlet, and a beveled lip carried by the piston and movable across the opening. 40 45

4. A whistle including a barrel provided with an opening in its sides adjacent one end portion, an inlet for actuating fluid at said end portion of the barrel, a piston slidable in the barrel, means yieldably urging the piston toward the fluid inlet whereby the piston will move in the chamber upon variation of pressure of fluid issuing from said inlet, a beveled lip carried by the piston and movable across the opening, and means for limiting movement of the piston toward the fluid inlet to prevent complete closure of the barrel opening by said lip. 50 55 60

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in the county of Milwaukee and State of Wisconsin.

WILLIAM A. HEYER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."