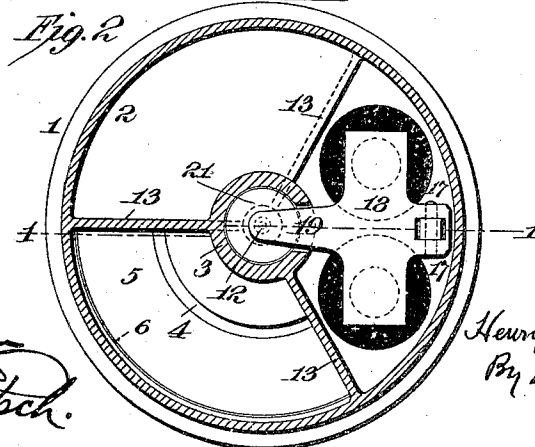
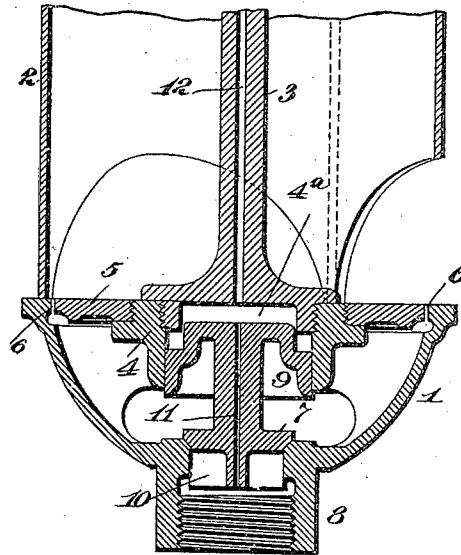
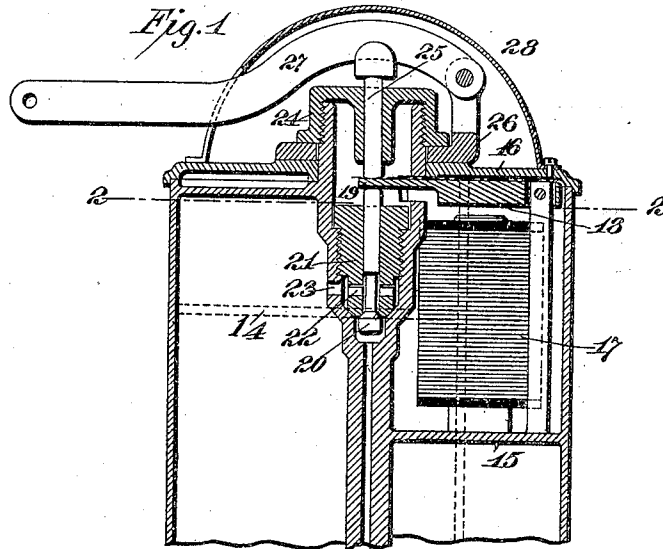


H. W. AYLWARD.
CHIME WHISTLE.
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UNITED STATES PATENT OFFICE.

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CHIME-WHISTLE.

951,877.

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To all whom it may concern:

Be it known that I, HENRY W. AYLWARD, a citizen of the United States, residing in the borough of Brooklyn, city of New York, State of New York, have invented a certain new and useful Chime-Whistle, of which the following is a description.

The object I have in view is the production of a chime whistle which will be electrically operated and which at the same time will have the appearance of an ordinary manually-operated chime whistle, and which will be compact, composed of few parts, and entirely self-contained. I attain these objects by the mechanism illustrated in the accompanying drawings, which show one embodiment of the invention and in which—

Figure 1 is a vertical longitudinal section of the whistle taken on the line 1—1 of Fig. 2, and Fig. 2 is a horizontal section of the same taken on the line 2—2 of Fig. 1.

In both views like parts are designated by the same reference characters.

In carrying out the invention I provide a whistle which comprises a bowl 1 and a bell 2. The bell is provided with the usual stem 3, which is enlarged at the bottom and screwthreaded into the annular center-piece 4 of the bowl 1. A plate 5 is screwed on the outside of the center-piece 4, the said plate being sufficiently small to produce an annular opening 6 to permit the escape of steam against the lower edge of the bell 2. The main steam valve 7 closes the entrance of steam to the interior of the bowl 1, such entrance being through the stem 8. This stem is internally screwthreaded, as shown, for attachment to the steam pipe.

In connection with the steam valve 7 is a piston 9. The piston 9 is shown as formed integrally with the valve. It is of larger size than the valve, and makes a close steam-tight fit with the cylindrical interior of the center-piece 4, which cylindrical interior constitutes the cylinder within which the piston 9 will work. The piston can slide up and down within this cylinder to open and close the valve 7. This valve is provided with guiding wings 10 on its lower face, so that it will always be properly aligned. A steam port 11 passes through the valve 7 and communicates with the upper side of the piston 9. The stem 3 of the bell 2 is provided with a central port 12 which communicates with the inside of the chamber 4^a formed of the

piston 9, the fitting 4 and the bottom of the stem 3. This port 12 is somewhat larger than the port 11.

The bell 2 is shown as divided into three sections of different lengths by means of 80 partitions 13. Other partitions 14 and 15 within two of these sections form the upper walls of the sections and define their lengths. The location of the partitions 14 and 15 is such that the desired musical note will be 85 produced in order to constitute the chime effect of the whistle. Within the space formed between the partition 15 and the top 16 of the bell are located the operating magnets 17. The compartment produced by the 70 partition 15, the partitions 13 and the outside of the bell is of adequate size to contain magnets of the necessary power. These magnets actuate an armature 18 which has a finger 19 which extends toward the center of 75 the bell. This finger engages with the stem of a valve 20. The valve 20 is an auxiliary valve for controlling the passage of steam to the main valve 7 and opening and closing the same. The valve 20 is carried within a 80 plug 21 which is screwed into an enlargement of the port 12 of the stem 3. This plug 21 is provided with a transverse port 22, which is contiguous to an opening 23 to permit the escape of steam into one of the 85 sections of the chime whistle.

The stem 3 of the bell extends upward above the cover some distance, and is there screwthreaded for the attachment of a cap 24. This cap 24 carries a pin or plug 25 90 which engages with the finger 19 immediately over the stem of the valve 20. A bracket 26 surrounds the stem 3 and is clamped against the cover 16 by the cap 24. This bracket 26 carries an operating lever 95 27, which extends to one side of the whistle in the usual manner for attachment of the operating cord.

A casing 28 incloses the moving mechanism on top of the whistle, and provides a 100 suitable finish for the entire device. The operating circuits for the magnets (not shown) pass through openings in the cover 16.

The operation is as follows: Steam will 105 enter the stem 8 and tend to lift the valve 7 from its seat. It will pass through the port 11 and enter the chamber 4^a and will exert a pressure downward on the piston 9. As the latter is larger in area than the valve 7, 110

the valve will be retained closely upon its seat. The steam will also pass into the port 12 of the stem 3, but escape will be prevented by means of the auxiliary valve 20. To
 5 operate the whistle, the magnets 17 are first excited, which will attract the armature 18, and through the agency of the finger 19 will depress the stem of the auxiliary valve 20, opening the latter and permitting the
 10 escape of the steam from the port 12 into the atmosphere. As the port 12 is larger than the port 11, the steam will escape from the chamber 4^a quicker than it can enter the same; consequently the pressure upon the top
 15 of the piston 9 will be reduced, and the valve 7 will be lifted off of its seat by the pressure of the steam under it. The steam will then pass from the bowl 1 through the annular opening 6 and actuate the whistle.
 20 Upon the magnets being deenergized, the auxiliary valve 20 will be closed by the pressure of the steam against its lower face, thereby preventing escape of steam from the chamber 4^a. Pressure will immediately accumulate within this chamber through the
 25 port 11, overbalancing the upward pressure of the steam on the valve 7 and closing the latter. In operating the valve manually, by depressing the lever 27 the auxiliary
 30 valve 20 can be opened, and the main steam valve will operate in the same manner as before.

It will be seen from the preceding description that this whistle is extremely compact,
 35 containing, as it does, the main valve within the bowl and the operating magnets and auxiliary valve within the bell, and that it is self-contained and may be attached to the steam pipe as in the manner of an ordinary
 40 whistle not having the electrical appliance.

Another advantage of my improved whistle is that the main valve is vertical, as shown, which permits it to be of adequate
 45 size, and at the same time to lie entirely within the bowl. By this construction there are no steam joints outside of the bowl, and all ports are within the bowl, hence there are no difficulties in securing the absence
 50 of leakage. Another advantage lies in the fact that no seating spring is required, the valve tending to seat by its own weight, hence it responds very quickly to actions of the auxiliary valve.

Having now described my invention, 55 what I claim is new and desire to secure by Letters Patent is:

1. A whistle having in combination a

bowl, a bell and a stem, a main valve in the bowl and an auxiliary valve in the bell, the stem being hollow, the hollow serving as a 60 means of communication between the two valves, there being means for actuating the auxiliary valve.

2. A chime whistle having in combination, a bell containing a plurality of compartments of different lengths, a main 65 valve, and an auxiliary valve within the bell and in coöperative relation with the main valve to control the operation of said main valve, and electro-magnetic means 70 located in the space beyond a short compartment, such electro-magnetic means being operatively connected to the auxiliary valve.

3. In a whistle, the combination with the bowl, of a main valve within the bowl, a 75 bell, an auxiliary valve within the bell, a stem, a means of communication between the two valves, such means being through the stem, and means within the bell for actuating the auxiliary valve. 80

4. A whistle having in combination a bell, a main valve, an auxiliary valve within the bell and in coöperative relation with the main valve to control the operation of said 85 main valve, and electro-magnetic means located within the bell and operatively connected to the auxiliary valve, and additional operative means located outside of the bell and operatively connected to the auxiliary 90 valve.

5. A whistle having a chamber, a main valve, a piston operatively connected thereto, the said piston lying within the chamber, means for securing an accumulation of pressure within the chamber, tending to seat the 95 valve, such means including a port which passes through the piston and means for relieving pressure within the chamber, permitting the valve to open.

6. A steam whistle, having in combination 100 a chamber, a main valve, a piston operatively connected thereto and working within the chamber, the piston being connected to the stem of the valve with a steam passage through such stem, admitting steam 105 from one face of the valve to one side of the piston, and means for controlling the travel of steam through such passage.

This specification signed and witnessed this 27th day of July, 1906.

HENRY W. AYLWARD.

Witnesses:

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