

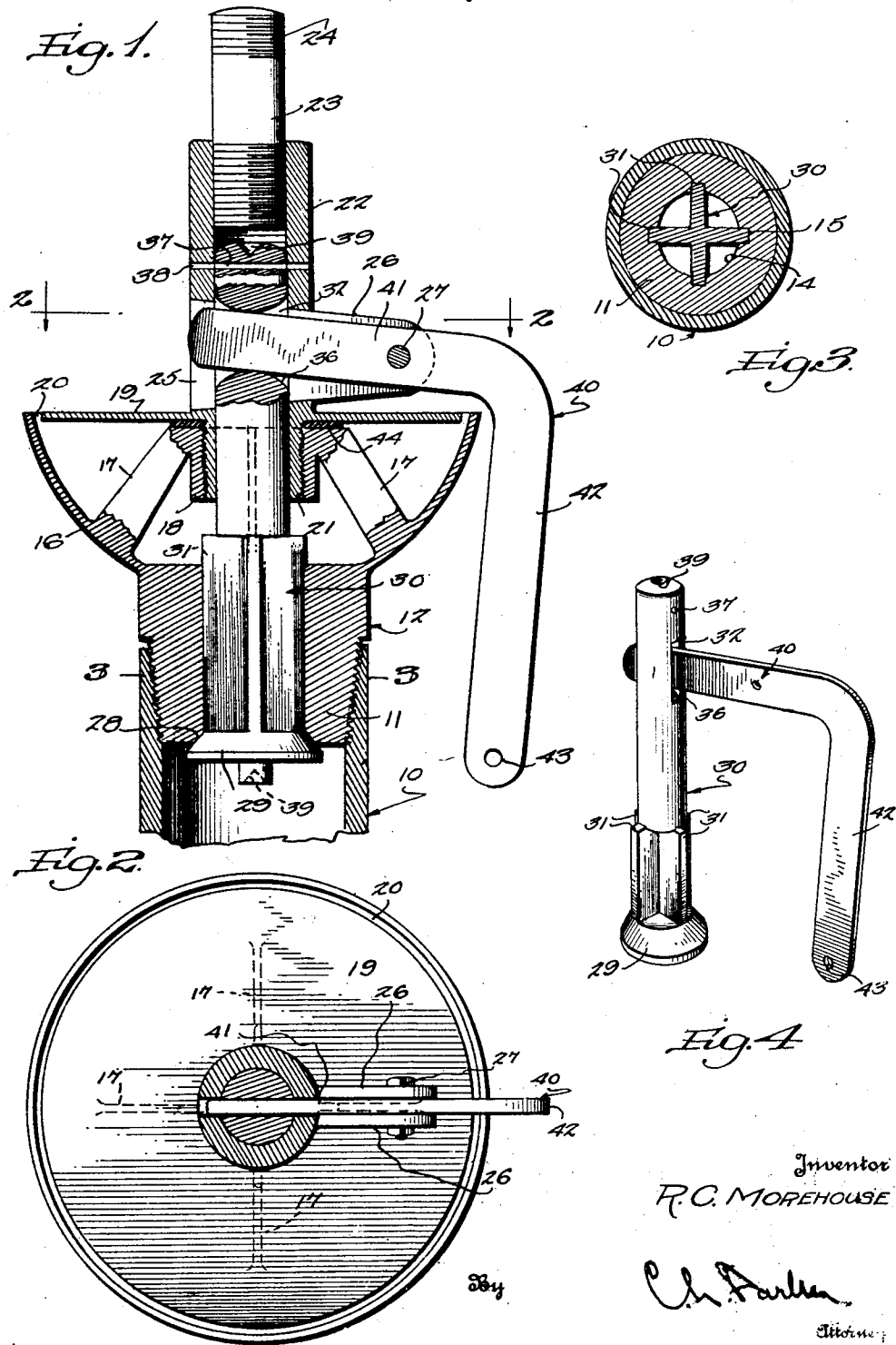
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LOCOMOTIVE WHISTLE

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LOCOMOTIVE WHISTLE.

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This invention relates to steam whistles and more particularly to whistles for use on railway locomotives.

It is the usual practice to construct locomotive whistles with a valve arranged to control passage of steam to the whistle, and to provide operating means for the valve arranged therebelow, thus necessitating the provision of openings in the steam line or the base of the whistle, through which the operating means extends. With such constructions it has been found that considerable leakage occurs past the operating means where it extends into the steam line. In the usual whistle constructions, it also has been found that inefficient means is provided for guiding the valve to provide for true axial movement thereof, and accordingly the valve becomes unevenly worn and permits the constant escape of steam. The leakage of steam as described, causes the clouding of the cab windows thus making it difficult for the engineer to see the trackway ahead of the locomotive. This elimination of the clouding of the cab windows permits the locomotive to be more safely operated by the engineer as will be apparent.

An important object of the present invention is to provide a novel form of valve having operating means therefor arranged above the valve to eliminate any openings for the operating means in the steam line, to prevent the escape of steam.

A further object is to provide a novel form of guide means for the valve and its stem whereby these elements are maintained in proper axial position, thus preventing uneven wearing of the valve and minimizing leakage past the valve.

A further object is to provide a valve of the character mentioned having a pair of guides for the valve stem whereby the valve is maintained in proper axial position, the valve stem extending above the guide means, beyond the whistle, and provided with novel operating means.

A further object is to provide novel operating means for a whistle valve of the character mentioned, provided with means whereby the operating means may be properly positioned with respect to the locomotive cab.

A further object is to provide improved lever means for operating the whistle whereby the operation is more easily accomplished

with much less effort than is required with the usual whistle constructions.

Other objects and advantages of the invention will become apparent during the course of the following description.

In the drawings I have shown one embodiment of the invention. In this showing:

Figure 1 is a central vertical sectional view, parts being shown in elevation,

Figure 2 is a section on the line 2—2 of Figure 1,

Figure 3 is a similar view on line 3—3 of Figure 1, and,

Figure 4 is a detail perspective view of the valve and operating means therefor.

Referring to the drawings, the numeral 10 designates a vertical steam pipe connected with the boiler of a railway locomotive to supply steam to the whistle. The pipe 10 is internally taper threaded at its upper end to receive the lower similarly threaded end 11 of a whistle base 12. The base 12 is provided with an axial opening 14 having vertical guide slots 15 cut in the walls thereof for a purpose to be described. The base 12 is further provided at its upper end with a hollow or bowl shaped portion 16 which is open at its upper end, as shown. A plurality of supporting arms 17 are preferably formed integral with the hollow portion of the base, and are adapted to support a stationary central sleeve 18 preferably formed integral with the arms 17, and internally threaded for a purpose to be described.

A plate 19 is arranged in the open end of the hollow portion of the base, and the outer edge of the plate 19 is spaced from the adjacent edge of the upper portion of the bowl 16, as shown at 20. This space is provided for the escape of steam and forms the locomotive whistle, as will be understood. The plate 19 is provided with an integral depending collar 21 which is threaded in the sleeve 18 to be supported thereby. The plate is further provided with an upstanding cylindrical portion 22 as clearly shown in Figure 1. The upper end of the portion 22 is internally threaded to receive the lower externally threaded portion of a stem 23. This stem is also provided with an upper threaded portion 24 adapted to support the usual whistle bell. Above the plate 19, the cylindrical portion 22 is provided with a slot 25 extending therethrough, and the cylindrical portion 22 is further provided with

a pair of arms 26. The space between the arms 26 forms a continuation of the slot 25, as will be apparent, and a pivot pin 27 is arranged between the ends of the arm 26, as shown in Figures 1 and 2.

The base 12 is provided in its lower end with a valve seat 28 against which normally seats a valve 29. This valve is preferably formed integral with an upstanding elongated valve stem indicated as a whole by the numeral 30, and the valve stem comprises at its lower end a plurality of guide members 31 corresponding in arrangement to the guide slots 15 and arranged therein. As shown in Figure 3, the guide members 31 permit the passage of steam past the lower portion of the valve stem when the valve is depressed by means to be described. The upper portion 20 of the valve stem is circular in cross section, and is slidably received in the collar 21. Above the plate 19, the valve stem is provided with a slot 32 corresponding in position to the slot 25. The upper and lower 25 extremities of the slot 32 are curved as at 33. The valve and the entire valve stem are preferably formed of cast steel, and the upper end of the valve stem is preferably case hardened to provide wearing surfaces 30 within the slot 32. The upper end of the valve stem 30 is provided with a diametrical opening 37 which aligns with similar openings 38 formed in the cylindrical portion 22. Lathe centers 39 are preferably provided in the opposite ends of the valve stem to permit it to be turned or trued when desired.

An operating member 40 is provided for reciprocating the valve stem. This member 40 includes an upper substantially horizontal arm 41 receiving the pin 27, and an outer substantially vertical arm 42 having an opening 43 in its lower end for connection with suitable operating means controllable 45 from the cab of the locomotive. The extremity of the horizontal portion of the operating lever is preferably case hardened to provide wearing surfaces where the member operates within the slot 32.

As previously stated, the base 12 is threaded in the upper end of the pipe 10, while the depending portion 21 of the plate 19 is threaded in the collar 18. Ordinarily it is sometimes difficult to arrange the operating lever 40 in proper position with respect to the locomotive cab to provide for the proper operation of the device. Accordingly, if desired, a washer 44 may be arranged between the plate 19 and the upper 60 end of the collar 18. Obviously any number of these washers may be employed to properly position the lever 40.

The operation of the device is as follows:

Before assembling the elements of the device, the upper end of the valve stem is in-

serted into the cylindrical portion 22, and a suitable pin is inserted through the openings 37 and 38 to support the valve against downward movement away from its seat. The lever is then arranged in the position 70 shown and the pivot pin 27 inserted. The pin in the openings 37 and 38 may be removed at any time after the operating lever is in position. The extension 11 is then threaded into the upper end of the steam 75 pipe, as will be apparent. When the device is in operation, the steam pressure present within the pipe 10 normally maintains the valve tightly seated. When the steam pressure drops however, the valve may be maintained against its seat to prevent escape of steam by moving the lower end of the operating lever inwardly. Operation of the whistle is accomplished by the engineer or 85 fireman by pulling the operating means or other device secured to the end of the arm 42, this action lowering the free end of the arm 41 to depress the valve stem. The valve is thus opened permitting escape of steam upwardly around the valve stem to 90 blow the whistle, as will be apparent. The upper and lower extremities of the slot 22 are rounded in the manner described to permit the swinging action of the horizontal portion of the operating lever. Releasing 95 the operating means permits the valve to be seated by steam pressure. With the operating lever arranged as shown, it will be apparent that it is unnecessary to provide the steam line, or any associated elements, with 100 openings through which any operating means extends. Thus the usual leakage around these operating elements is prevented. It will be apparent that the arrangement of the guides for the valve stems 105 maintains the latter in proper axial position throughout its range of movement, thus preventing the valve from becoming unevenly worn, and thus preventing the loss of steam due to the improper seating of the valve. 110 No particular type of whistle bell has been illustrated inasmuch as the device is applicable to any desired form thereof.

It is to be understood that the form of the invention herewith shown and described is 115 to be taken as a preferred example of the same and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the sub- 120 joined claims.

I claim:

1. A whistle comprising a base having a bowl shaped portion provided with an open 125 upper end, a depending portion forming a part of said base and adapted for connection with a source of operating fluid, said depending portion having an axial opening therethrough provided at its lower end with 130 a valve seat, a valve normally engaging said

seat, said valve being provided with an upwardly extending stem arranged in said axial opening and extending above said base, the upper end of said valve stem being provided with an opening, and means for actuating said valve stem, said last named means comprising a pivoted lever having one end vertically movable and arranged in the opening in said valve stem.

2. A device constructed in accordance with claim 1 provided with a plate arranged in the open end of said bowl shaped portion, an upstanding guide carried by the base and slidably receiving the upper end of said valve stem, said guide being provided with a slot registering with the opening in said valve stem, said lever being pivotally supported to said upstanding guide, one end of said lever being vertically movable and projecting through the slot in said guide and being arranged in the opening in said valve stem to effect vertical movement thereof.

3. In a locomotive whistle, a base including an upper bowl shaped portion having an open upper end and a depending cylindrical portion having an axial opening therethrough, a valve stem vertically slidable in said axial opening and having por-

tions spaced therefrom to permit passage of operating fluid therethrough, the lower end of said axial opening being provided with a valve seat, a valve carried by said stem and normally engaging said seat, a stationary sleeve carried by said base near its upper end, a plate arranged in the open end of said bowl shaped portion and supported by said sleeve, a guide extending upwardly from said plate, said guide being provided with a vertically elongated radial slot, said valve stem projecting upwardly into said guide and provided with a slot arranged in alignment with the slot in said guide, a lever pivotally supported intermediate its ends by said guide, one end of said lever being vertically movable and arranged in the slot in said valve stem, and means for supporting a whistle bell over said plate.

4. A device constructed in accordance with claim 3 wherein said stationary sleeve is internally threaded, a depending collar carried by said plate and threaded in said sleeve, and spacing means arranged between said plate and said sleeve.

In testimony whereof I affix my signature.

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