Aug. 7, 1923. 1,464,222

G. A. SAGER

THERMALLY CONTROLLED AUDIBLE SIGNAL

Filed June 8, 1921

Fig. 1.

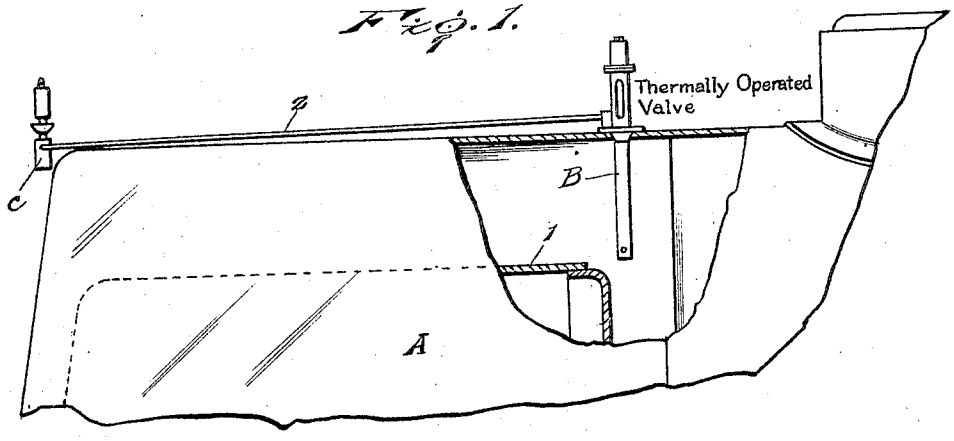
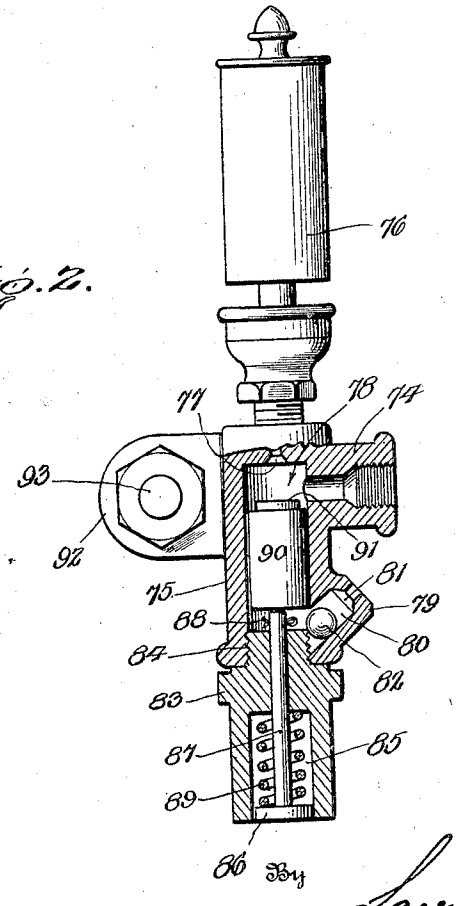


Fig. 2.



Inventor

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By Lacey & Lacey, Attorneys

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UNITED STATES PATENT OFFICE.

GEORGE A. SAGER, OF ALBANY, NEW YORK.

THERMALLY-CONTROLLED AUDIBLE SIGNAL.

Original application filed March 4, 1920, Serial No. 363,206. Divided and this application filed June 8, 1921. Serial No. 475,969.

To all whom it may concern:

Be it known that I, GEORGE A. SAGER, citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Thermally-Controlled Audible Signals, of which the following is a specification.

This invention relates to an improved thermally controlled audible signal for low water safety tell-tales, being a division of my pending application for low water safety tell-tales, filed March 4, 1920, Serial No. 363,206.

Among other objects, the invention seeks to provide a device for audibly apprising an engineer of the existence of a low water level and wherein the signal may be manually rendered inoperative so that after the signal has served its purpose, the sounding of the signal may be stopped.

Other and incidental objects will appear hereinafter.

In the drawing:

Figure 1 is a side elevation of a locomotive boiler with a portion of the shell thereof broken away to show the interior, this view illustrating the signal of the present invention in conjunction with the thermally controlled valve illustrated in my prior application referred to, and

Figure 2 is a side elevation, partly in section, of the signal.

Referring now more particularly to the drawing, I have, for convenience, shown my improved signal in connection with a locomotive boiler A, the portion of the boiler shown being broken away to illustrate the crown sheet 1. Approximate the end of said sheet is disposed a thermally actuated valve B. Since this valve forms the subject matter of my prior application previously identified, it need not be herein described in detail, it being sufficient to state that upon the occurrence of a low water level in the boiler, the valve will automatically operate to admit steam from the boiler through a pipe 2, and mounted upon this pipe is the signal of the present invention, indicated as a whole by the letter C. This signal will now be described in detail.

Connected with the pipe 2 is the inlet 74 of a casing 75 and secured to the top portion of said casing is a steam whistle 76 which communicates with a passage 77 entering a cylindrical chamber 78 which connects with the inlet 74. The chamber 78 is provided with a boss 79 recessed as shown at 80 to provide a seat 81 having a ball valve 82 which normally is maintained off its seat by gravity in order that the chamber 78 may be kept clear of water of condensation. The pipe 2 is sloped toward the opening 74 and will thus also be relieved of water of condensation by means of the ball valve 82. The lower end of the chamber 78 is closed by a member 83 threaded thereinto as indicated at 84 and chambered on the lower end as at 85 to receive a button 86 having a stem 87. Maintaining the button in proper relation to the member 83 is a cotter pin 88 passing through the end of the stem which is located in the chamber 78 and a spring 89 keeps the stem in its lowermost position. Within the chamber 78 is a loosely fitting plunger 90 having a valve end 91. As steam enters the inlet 74, the whistle 76 is blown by the passage of the steam through the outlet 77. However, since it is not necessary that this whistle continue to blow, as its continuous blowing might obscure other significant sounds, means are provided for cutting out the operation of the signal. In order to accomplish this, the button 86 is pressed upwardly and the stem 87 carries with it the loosely fitting plunger 90, the valve end 91 of which closes the opening 77 and cuts out the operation of the whistle 76. After pressing the loosely fitting plunger 90 to its upward position, the stem 87 may be released but the plunger will remain in its upward position due to the fact that by reason of the loose fit of the plunger, pressure then obtains beneath the plunger with the result that said plunger is maintained in the upward position cutting off actuation of the whistle 76. When the valve B closes, cutting off the steam pressure in the pipe 2, the plunger 90 will then return by gravity to its lowermost position. In order to properly attach the signal, a lug 92 is provided which receives a bolt 93 for securing the signal at any suitable location.

Having thus described the invention, what is claimed as new is:

1. A low water safety tell-tale comprising in combination with a steam generator, a thermally operated valve, an audible signal, a steam line controlled by said valve and having a connection with said signal and

sloping toward the latter whereby water of condensation occurring in the said steam line gravitates towards said signal, and means automatically relieving the steam line and signal of such water.

2. A low water safety tell-tale comprising in combination with a steam generator, a thermally operated valve, an audible signal, a steam line controlled by said valve and having connection with said signal and draining toward the same whereby the water of condensation accumulating in said steam line gravitates toward said signal, and signal controlling means including means relieving said steam line of such water.

3. A low water safety tell-tale including a casing having a steam inlet and outlet, a plunger mounted for free individual movement in the casing to coact with said outlet cutting off flow of steam therethrough, and means for shifting the plunger.

4. A low water safety tell-tale including a casing having a steam inlet and outlet, a plunger mounted in the casing to coact with said outlet cutting off flow of steam therethrough and adapted to be held closed by steam pressure, and means for shifting the plunger.

5. A low water safety tell-tale including a casing having a steam inlet and outlet, a plunger mounted in the casing to coact with said outlet cutting off flow of steam therethrough and adapted to be held closed by steam pressure, and manually operable means for shifting the plunger to closed position.

6. A low water safety tell-tale including a casing having a steam inlet and outlet, a plunger mounted in the casing to coact with said outlet cutting off flow of steam therethrough and adapted to be held closed by steam pressure, and a rod for shifting the plunger to closed position.

7. A low water safety tell-tale including a casing having a steam inlet and outlet, a plunger shiftable in the casing to coact with said outlet cutting off flow of steam therethrough, the plunger being loosely mounted in the casing whereby steam may flow past the plunger to act thereagainst for holding the plunger closed, and means for shifting the plunger.

8. A low water safety tell-tale including a casing having a steam inlet and outlet, a plunger shiftable in the casing to coact with said outlet cutting off flow of steam therethrough, means for shifting the plunger and means relieving the casing of water of condensation.

9. A low water safety signal including a casing having an outlet, a fluid operated tell-tale connected with the casing, a plunger within the casing shiftable to closed position coacting with said outlet held closed by fluid pressure rendering the tell-tale inactive and automatically shiftable to open position when the fluid pressure is relieved, and means for shifting the plunger to closed position.

10. A low water safety signal including a casing having an outlet, a fluid operated tell-tale operatively connected with the casing, means within the casing shiftable to closed position coacting with said outlet to be held closed by fluid pressure for rendering the tell-tale inactive, and means upon the casing to operatively cooperate with said first mentioned means for shifting said first mentioned means to closed position.

In testimony whereof I affix my signature.

GEORGE A. SAGER. [L. S.]