

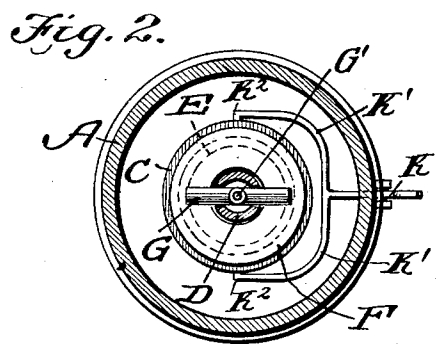
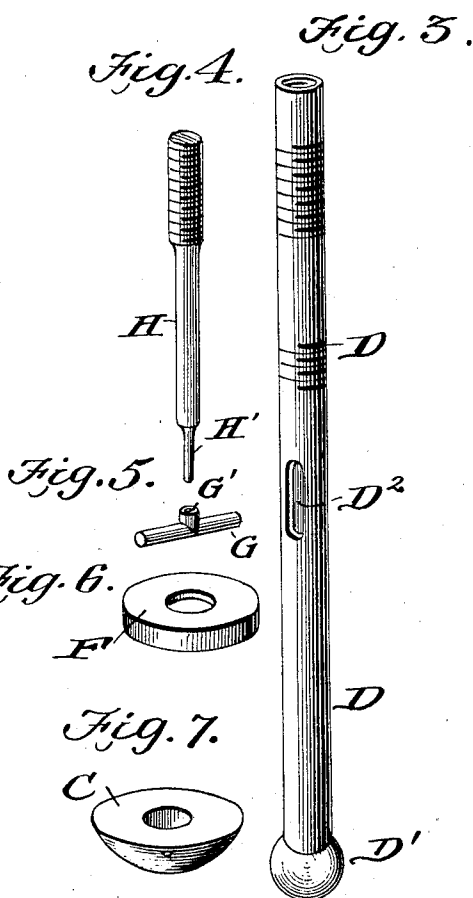
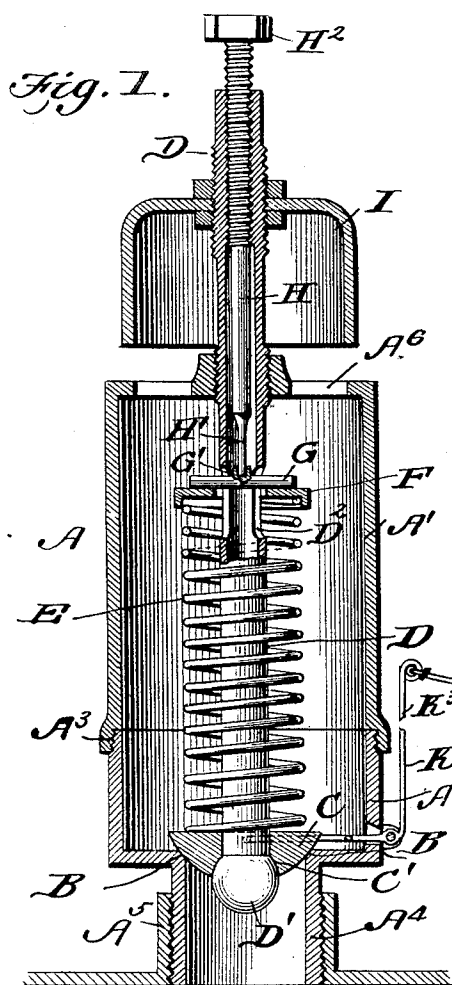
No. 716,568.

Patented Dec. 23, 1902.

E. G. MOORE.
STEAM BOILER INDICATOR.

(Application filed Mar. 29, 1902.)

(No Model.)



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UNITED STATES PATENT OFFICE.

EARNEST GEORGE MOORE, OF FORT WAYNE, INDIANA.

STEAM-BOILER INDICATOR.

SPECIFICATION forming part of Letters Patent No. 716,568, dated December 23, 1902.

Application filed March 29, 1902. Serial No. 100,645. (No model.)

To all whom it may concern:

Be it known that I, EARNEST GEORGE MOORE, a citizen of the United States, residing at Fort Wayne, in the county of Allen and State of Indiana, have invented a new and useful Steam-Boiler Indicator, of which the following is a specification.

This invention is an improved construction of steam-boiler indicator or alarm, the object being to provide a simple and efficient device for use in connection with a steam-boiler for the purpose of indicating and sounding the alarm whenever the pressure within the boiler reaches or passes beyond a predetermined point of pressure.

Another object of the invention is to provide a device which can be quickly and easily adjusted or regulated so as to operate at any desired pressure.

With these various objects in view the invention consists in the novel features of construction and combination, all of which will be fully described hereinafter and pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a sectional view illustrating an indicator or alarm constructed in accordance with my invention. Fig. 2 is a sectional view on the line 2 2 of Fig. 1. Fig. 3 is a detail perspective view of the valve-stem. Fig. 4 is a detail perspective view of the adjusted spindle. Fig. 5 is a view illustrating the pressure-bar. Fig. 6 is a detail perspective view of the washer. Fig. 7 is a top view of the valve. Fig. 8 is an inverted perspective view.

In carrying out my invention I employ a cylindrical shell A, preferably composed of an upper section A¹ and a lower section A², united by means of a screw-joint A³. The lower section A² has an externally-threaded neck portion A⁴, which is adapted to screw into the threaded collar A⁵, arranged at any suitable point upon the top of the boiler. The shoulder at the juncture of the neck portion A⁴ and bottom of section A² is ground down to provide a seat for the valve C, which is arranged upon the lower end of the valve-stem D, said stem having a ball D' at its lower end, which fits into the socket C', formed in the bottom face of the valve C, said valve being essentially in the form of a hemisphere,

the convex side thereof being seated upon the valve-seat B, as most clearly shown in Fig. 1, and by having the socket C' in the lower face of said valve in which the ball D' fits a perfectly-tight joint is obtained and a passage of steam between the valve and stem avoided. The valve C is normally held down upon its seat C' by means of a spiral spring E, which surrounds the valve-stem D and bears at its lower end upon the flat upper face of the valve C, the upper end of said spring pressing against a washer F, which is held in place by means of a bar G, working in a vertical slot D², produced in a stem, and in order to hold the said bar in place against the washer and also to regulate the pressure thereon I employ a spindle H, which screws into the upper end of the valve-stem and is reduced at its lower end, as shown at H', to engage the socket-boss G', arranged centrally upon the bar G. The spindle H has a head H², by means of which the said spindle can be turned for the purpose of raising or lowering the same within the valve-stem, and thereby increasing or decreasing the pressure of the spring upon the valve, and in this manner the point at which the valve becomes elevated can be regulated to suit any desired pressure. A whistle-bell I is mounted upon the upper end of the valve-stem directly above the cylindrical shell A, and the top of said shell is provided with openings A⁶, through which steam can pass for the purpose of sounding the whistle. The whistle-bell I is adjustable upon the valve-stem, so that the intensity of the sound can be quickly and easily regulated.

In operation the parts are assembled as shown in Fig. 1, and the moment the pressure within the boiler exceeds the tension of the spring the valve will be unseated and steam passes through the shell and contacting with the whistle will sound an alarm and indicate to the engineer that a predetermined pressure of the boiler has been reached or exceeded. It will thus be seen that by turning the spindle up or down the pressure or tension of the spring can be regulated or adjusted, thereby enabling the valve to become operative at any point of pressure desired.

In order to open the valve for sounding the alarm, as is often desired for obvious reasons, I pivotally support a bail-shaped lever K

upon one side of the shell and having its inner end projecting through the lower section of the shell and terminating in branch sections K', whose extreme ends are bent inwardly, as shown at K², to provide pintles upon which the valve C is held. These branch sections K' are arranged upon opposite sides of the valve, as shown in Fig. 2 of the drawings. The opposite end of the lever extends up alongside of the shell, as shown at K³, and has its free end terminating in an eye to which a cord or chain is attached, that is arranged within easy reach of the engineer. By this arrangement the valve may be opened to cause the whistle to sound at any desired time.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A steam-boiler indicator comprising a shell formed of two parts, a valve arranged at lower end of said shell, a stem upon which the valve is arranged, the lower end of said stem having a ball adapted to fit into a curved socket produced in the bottom of the valve, a spring adapted to bear upon the said valve, means for regulating the pressure or tension of the said spring, and a whistle arranged upon the shell or casing and adapted to receive the impact of steam when the valve is open, and a lever for operating the valve, substantially as described.

2. In a steam-boiler indicator, the combination with a shell, a hemispherical valve seated at the lower end of said shell or casing, a valve-stem projecting upwardly through the said casing and having a ball at its lower end and

upon which the valve rests, a spring bearing upon the said valve, a washer bearing upon the said spring, and an adjustable spindle for regulating the tension of the spring, said spindle being arranged within the valve-stem and a whistle arranged above the shell or case and upon the valve-stem, and a lever pivotally held upon the casing and connecting the valve, substantially as specified.

3. A steam-boiler indicator comprising in combination a cylindrical shell composed of two sections, the lower one of which has a valve-seat arranged adjacent to its lower end, a hemispherical valve arranged upon the said seat, a stem for guiding said valve and lowering said stem having a ball arranged thereon adapted to fit into a socket produced in the lower side of the valve, a coil-spring surrounding the valve-stem and bearing upon the valve, a washer arranged to bear upon the said spring, a cross-bar arranged above the washer and within the slot produced within the said valve-stem, an adjustable spindle arranged within the stem, its lower end bearing upon the cross-bar, and the adjustable whistle arranged upon the valve-stem above the cylindrical shell, the upper end of said cylindrical shell having openings for the escape of steam, and a bail-shaped lever pivoted to the shell and connected to the valve, substantially as described.

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