

May 13, 1924.

1,493,570

T. B. SLATE

SAFETY VALVE AND SIGNAL DEVICE COMBINED

Filed April 28, 1923

Fig. 5.

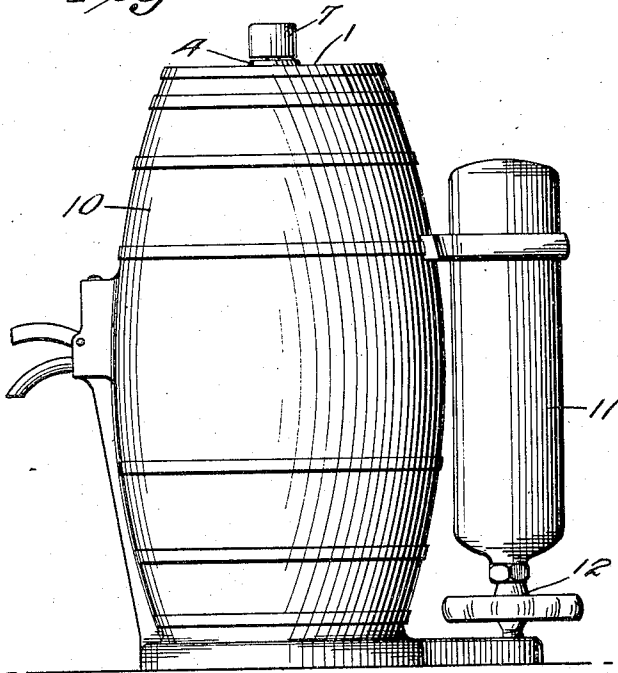


Fig. 3.

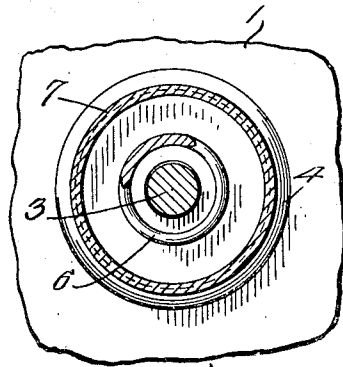


Fig. 1.

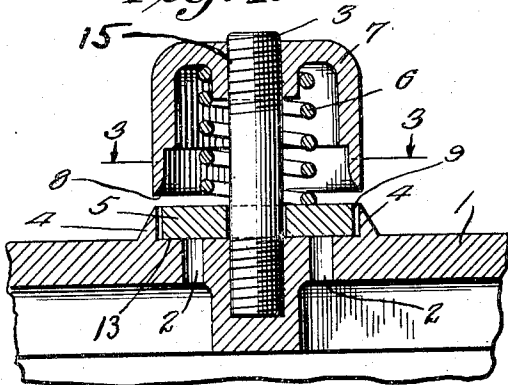


Fig. 4.

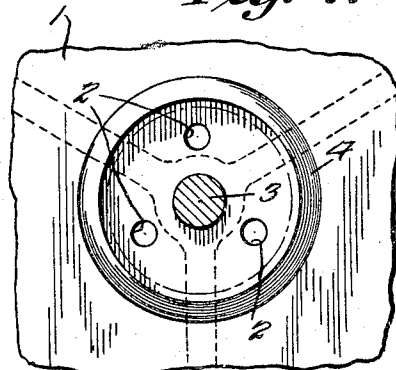
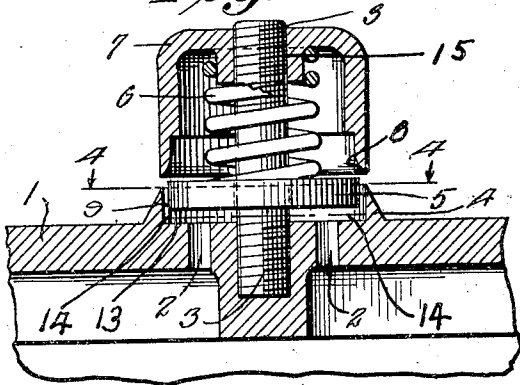


Fig. 2.



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1,493,570

UNITED STATES PATENT OFFICE.

THOMAS B. SLATE, OF LONG ISLAND CITY, NEW YORK, ASSIGNOR TO WALTER S. JOSEPHSON, OF BELLE HARBOR, LONG ISLAND, NEW YORK.

SAFETY VALVE AND SIGNAL DEVICE COMBINED.

Application filed April 28, 1923. Serial No. 635,223.

To all whom it may concern:

Be it known that I, THOMAS B. SLATE, a citizen of the United States, residing at Long Island City, in the county of Queens and State of New York, have invented a new and useful Safety Valve and Signal Device Combined, of which the following is a specification.

The object of my invention is to provide a novel combined safety valve and audible signal device, adapted for use on any kind of container of a vapor or gas under pressure; and to provide the novel combination and arrangement of parts disclosed in the accompanying drawings, in which—

Figure 1 is an enlarged vertical section through the valve;

Fig. 2 is a similar section, partly in elevation;

Fig. 3 is a horizontal section on line 3—3 of Fig. 1;

Fig. 4 is a horizontal section on line 4—4 of Fig. 2; and

Fig. 5 is a side elevation of the valve showing one of its applications, namely, to a carbonator tank in which is contained carbon dioxide under pressure.

Like numerals designate like parts in each of the several views.

Referring to the accompanying drawings, 1 designates the tank cover or wall provided with ports 2, the wall or cover 1 also being provided with an annular flange 4. I provide a suitable post or standard 3 secured to cover or wall 1 and carrying a bell 7 adjustably mounted on threaded end 15 of standard 3. Within the bell 7 is a coiled spring 6 which presses on ring or washer 5 and holds it on its seat 13, normally closing the ports 2, as shown in Fig. 1. The washer or ring 5 is of somewhat smaller diameter than the annular flange 4, so as to provide an annular space 9 around the edge of the ring.

When the pressure under or within the cover or tank 1 increases beyond a predetermined point where it exceeds the counterbalancing pressure of spring 6 on washer 5, it forces the washer 5 upwards into the position shown in Fig. 2, in which position the gas or vapor passes out through ports 2, passages 14 and 9 and strikes the tapered annular edge 8 of bell 7 with sufficient velocity to vibrate the bell and produce an audible whistle. The edge 8 of the bell 7

is positioned approximately in alignment and directly over the passage 9.

In Fig. 5 is illustrated one application of my invention. In this instance my invention is applied to the cover 1 of a carbonator tank 10 which is in communication with and supplied with carbon dioxide under pressure from a carbon dioxide container 11, the supply being controlled by a conventional valve 12.

The tendency of the escaping gas is to flow out, and it has to pass under its own flow or current to escape from the bell and this sets up a vibration of the bell. By regulating the tension of the spring 6 by screwing the bell further down on the threaded end 15 of standard 3, the degree of carbonation may be determined. However, if the charging with carbon dioxide is not such as to suit the taste of the user at the time the signal is given, charging may be continued by adjusting the valve to withstand a greater pressure within the tank.

I do not wish it to be understood that my invention is limited to its use with such a device, as it is adapted for use in a variety of ways.

What I claim is:

1. A safety valve and signal device combined in combination with a container of a gas or vapor under pressure, the tank having ports for the escape of gas and having an exterior flange surrounding said ports, a standard rigidly secured to the tank, a washer slidably mounted on and relative to the standard and seating over the ports and within the annular flange, said washer having its periphery spaced from the annular flange to provide an annular passage between, a bell secured to the standard, said bell having its annular bottom edge positioned approximately in alignment with the annular passage between the periphery of the washer and the inner edge of the exterior annular flange, and a spring mounted within the bell and bearing on the top of the washer to hold same to its seat until the pressure of gas in ports exceeds a predetermined amount to raise the washer and release the gas and at the same time sound an audible signal.

2. A safety valve and signal device combined in combination with a container of gas or vapor under pressure, said container

having ports for the escape of the gas or vapor, and having external annular flange encircling said ports, a standard secured to the container and positioned concentric with the annular flange, said standard having a threaded outer end, a bell adjustably mounted on the threaded outer end of the standard, a spring contained within the bell and arranged to permit of adjustment of its tension by adjustment of the bell on the standard, a washer on which the spring bears, said washer normally seating over the ports in the tank, an annular space being provided between the periphery of the washer and the annular interior surface of the annular flange, the bottom edge of the bell being positioned directly over said annular spaces, whereby the escaping gas will impinge against the edge of the bell and vibrate same to sound an audible signal, the spring pressed washer also providing an adjustable automatic relief valve.

THOMAS B. SLATE.