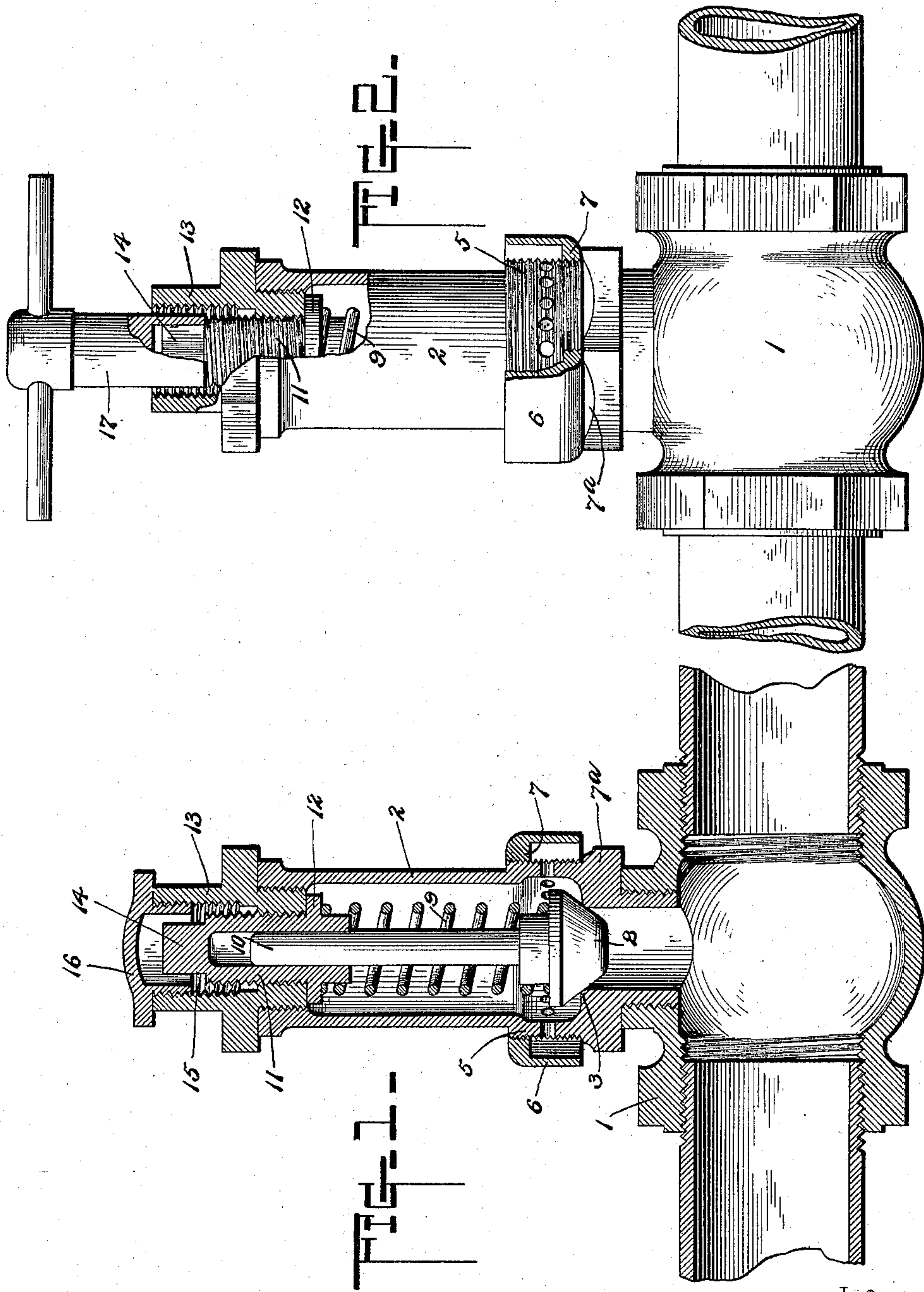


(No Model.)

C. S. WAYBRIGHT.
SAFETY VALVE.

No. 590,195.

Patented Sept. 14, 1897.



Inventor
Charles S. Waybright,

Witnesses

A. M. Poynton.

By *his* Attorneys,

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

CHARLES SWITZER WAYBRIGHT, OF CRABBOTTOM, VIRGINIA.

SAFETY-VALVE.

SPECIFICATION forming part of Letters Patent No. 590,195, dated September 14, 1897.

Application filed December 16, 1896. Serial No. 615,909. (No model.)

To all whom it may concern:

Be it known that I, CHARLES SWITZER WAYBRIGHT, a citizen of the United States, residing at Crabbottom, in the county of Highland and State of Virginia, have invented a new and useful Safety-Valve, of which the following is a specification.

My invention relates to fluid-pressure safety or relief valves for use in connection with pumps and other mechanisms in which the parts are exposed to variable fluid-pressure or wherein obstructions are liable to occur by accumulations of sediment or otherwise and thus interfere with the proper transmission of the pressure to the parts designed for its reception.

The object in view is to provide a simple, inexpensive, and efficient construction and arrangement of parts whereby the device is adapted to be applied with facility to a pipe or conductor exposed to fluid-pressure, and, furthermore, to provide a construction wherein the tension of the actuating-spring is adapted to be adjusted with facility.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a central sectional view of a safety-valve constructed in accordance with my invention. Fig. 2 is a side view, partly in section, of the same, showing the deflecting-hood inverted to adapt the device for use as a steam safety-valve, the key, which is employed for adjusting the tension of the valve-actuating spring, being shown in operative position.

Similar numerals of reference indicate corresponding parts in both figures of the drawings.

1 designates a pipe-coupling into which is threaded the lower-reduced extremity of a casing 2, forming one member of the improved valve, said casing being provided with a valve-seat 3, and contiguous to and above the same with vents preferably formed in annular series in a thickened portion 5 of the wall of the casing, said thickened portion or boss being exteriorly threaded for engagement by a reversible hood 6. This hood is of annular construction, provided at one edge with an

inturned interiorly-threaded flange 7 to engage the threads of the boss 5, and when the valve is used in connection with pumps to regulate the pressure of the liquid passing therethrough this hood is preferably arranged in the downturned position illustrated in Fig. 1, whereby the liquid, after escaping through the vents, is deflected downwardly and escapes between the lower or free edge of the hood and the cut-away or chamfered edges of the wrench-seat 7^a.

In Fig. 2 the hood is shown inverted or with its free edge upturned and its threaded flange arranged below the plane of the vents, whereby the valve is adapted for use in connection with vapor-pressure, as in connection with a steam-engine.

The valve 8 is provided with an actuating-spring 9, which normally holds it seated, and the upper extremity of the valve-stem 10 extends into the tubular guide 11, while a collar 12 on said guide bears upon the upper end of the actuating-spring, and this guide is adjustably fitted, as threaded, in an axial bore provided for its reception in the casing-head 13. The upper extremity of the tubular guide is squared to form a wrench-seat 14, which is arranged in an interiorly-threaded socket 15 in said casing-head, the upper end of the socket being closed by a removable cap 16.

From the above description it will be seen that when the pressure in a pipe or conductor to which the valve is attached exceeds that for which the valve is set the latter will be unseated to allow the escape of fluid and hence the reduction of pressure, and in order to regulate the valve-spring to correspond with the desired pressure it may be accomplished by means of a key 17, (shown in Fig. 2,) which is applied to the wrench-seat at the upper extremity of the valve-stem guide, the cap in the socket formed in the casing-head being previously removed.

It will be seen, furthermore, that the boss in which the vents are formed is threaded continuously from a point above to a point below the plane of the vents to provide for the inversion of the hood. Furthermore, it is obvious that when used as a safety or relief valve for steam the device may be applied directly to the steam-dome of a boiler, the casing 2 being of course detached from the

coupling 1, which is merely shown in connection with the drawings to illustrate the means of attachment to a pipe.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. A valve of the class described, having its casing provided with lateral vents and a contiguous valve-seat, a normally-seated yielding valve controlling said vents, and a deflecting hood, open at one side, provided with an interior flange threaded exteriorly upon the casing contiguous to the plane of said vents and adapted to be reversed to extend either upwardly or downwardly thereover, said interior flange of the hood being of a thickness equal to the diameter of the vents, and the cylinder being threaded upon each side of the plane of the vents a distance equal to the thickness of said flange, to provide for arranging the flange upon either side of the plane of the vents, substantially as specified.

2. A valve of the class described, having its casing provided with lateral vents and a contiguous valve-seat, a normally-seated yielding valve controlling said vents, a head removably fitted in and coextensive with the casing and provided at the inner end of its bore with a threaded portion, a valve-stem guide adjustably fitted in the threaded portion of the bore of the head and provided at its outer extremity with a wrench-seat, said guide being provided with a collar of smaller diameter than the interior of the casing to engage the contiguous extremity of a valve-actuating spring, and a cap removably fitted in a counterbored and threaded portion of said head to normally conceal and give access to the wrench-seat of the guide, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHARLES SWITZER WAYBRIGHT.

Witnesses:

MINOR K. SIMMONS,
EMORY N. WIMER.