M. A. HUDSON.

STEAM SAFETY VALVE.

APPLICATION FILED AUG. 7, 1909.

944,330. Patented Dec. 28, 1909.

Fig. 3.

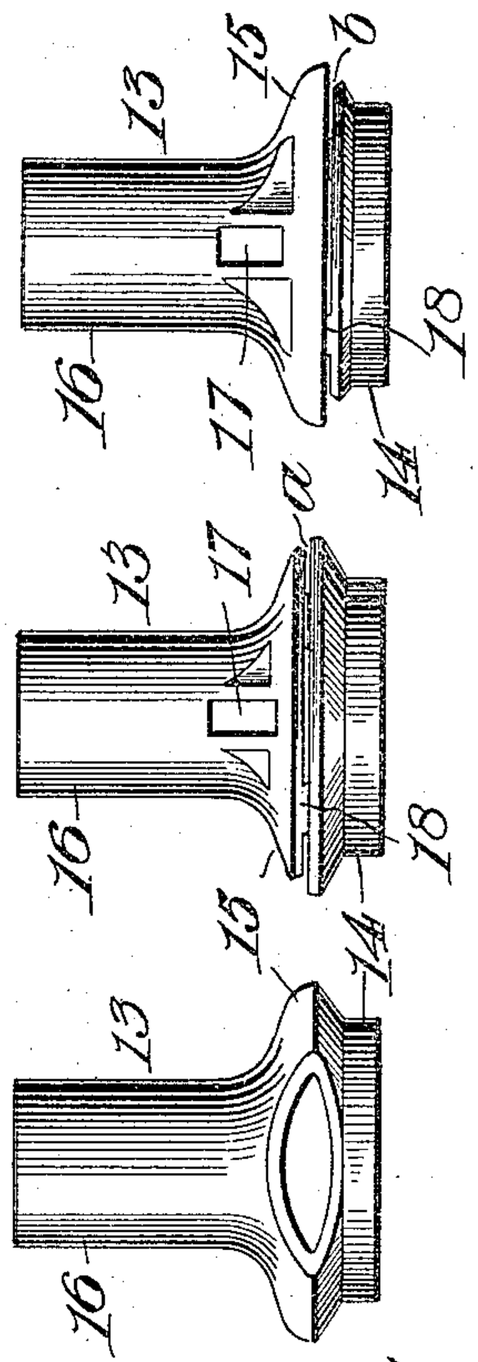


Fig. 4.

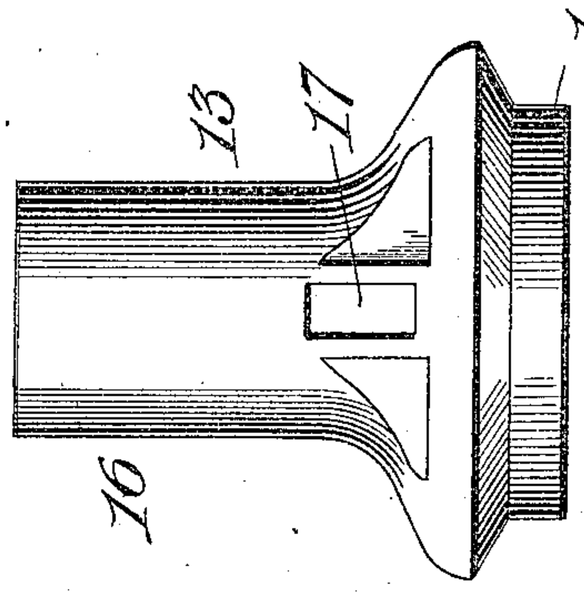


Fig. 5.

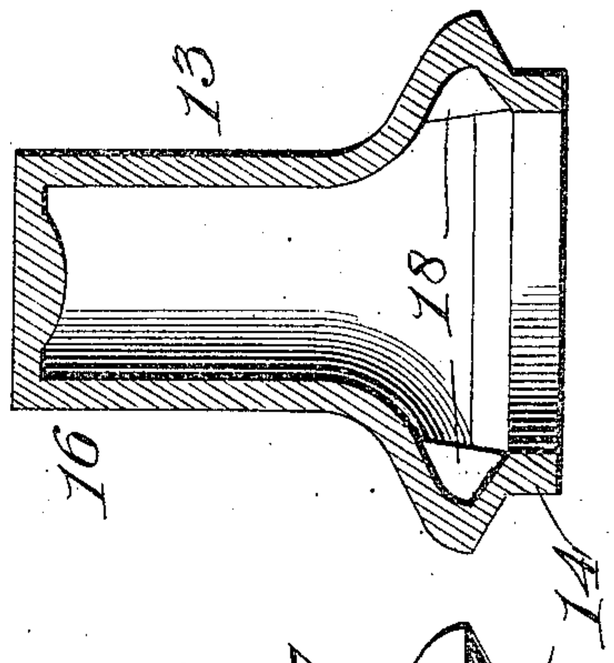


Fig. 2.




Fig. 1.




Witnesses

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# UNITED STATES PATENT OFFICE.

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## STEAM SAFETY-VALVE.

944,330. Specification of Letters Patent. **Patented Dec. 28, 1909.**

Application filed August 7, 1909. Serial No. 511,705.

*To all whom it may concern:*

Be it known that I, MILTON A. HUDSON, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Steam Safety-Valves, of which the following is a specification.

This invention relates to improvements in steam safety valves, and has particular reference to safety valves designed for use on steam boilers and for steam heating apparatus.

The invention consists essentially in an improved pressure regulating cap or hood having the blow-off located therein; means for regulating and adjusting the valve to a predetermined pressure whereby, when the pressure cap is removed for cleaning or other purposes, it can be quickly and accurately returned to position and to the exact predetermined pressure by any person, whether skilled or not.

The invention further consists in a new and novel blank or form for the manufacture of these pressure regulating caps or hoods, whereby a cap or hood may be produced having the blow-off either at the side of the cap, the bottom of said cap, or at the top thereof, as may be desired.

To these ends the invention consists in the novel construction of the several parts of the device as hereinafter described, illustrated in the drawing, and more particularly pointed out in the claims hereunto appended.

In the drawings:—Figure 1 is an elevation of the valve complete. Fig. 2 is a central vertical section thereof. Fig. 3 are views of my improved finished pressure regulating cap or hood, showing the blow-off located in the top of the cap or hood, the side and also in the bottom thereof. Fig. 4 is a view in elevation of a blank or form from which the completed cap is made, and Fig. 5 is a vertical sectional view thereof, showing the interior arrangement of the parts.

Referring to the drawing by numerals, 1 indicates that portion of the safety valve which is connected to the pipe leading to the steam supply and has therein the valve seat 2.

The numeral 4, indicates the valve and its adjacent parts, wherein 3, is the valve proper adapted to co-act with the valve seat 2.

5, is the usual form of guide for the valve extending downward into the pipe portion 1.

6, indicates a baffle plate surmounting the valve 4, and is adapted to force the escaping steam outwardly over the top edge 7, of the pipe 1.

The numeral 8, indicates the stem of the valve and is provided near the top with a boss 9 providing a seat 10, for the valve tensioning spring 11.

The upper outside surface 12, of the pipe portion 1, is screw-threaded for the reception of a downwardly extending flange of the pressure regulating cap or hood 13. The pressure regulating cap 13, is preferably of the shape shown and is provided with a downwardly extending internally screw-threaded flange 14, adapted to fit over the externally screw-threaded end 12, of the pipe portion 1. Above the flange 14, is a bulged or enlarged portion 15, forming an enlarged or distended chamber terminating in the spring-containing dome 16. On the upper side of the bulged or enlarged portion 15, is an opening 17, for the insertion of a lever to open the valve by hand when necessary. On the inside of the cap 13, in the bulged or enlarged portion 15, are a number of vertically extending webs, preferably four, 18, which serve to strengthen and brace the portion 15, and form the only connection between the upper or dome-like portion of the cap 13, and the screw-threaded portion 14, when the upward or downward blow-out is made by cutting either of the channel-like passages *a*, or *b*, shown in two of the views in the Fig. 3. These webs 18 are cast integral with the interior of the cap, and are, preferably, set radially therein.

In Fig. 3, I have shown three views of my improved tensioning cap or hood 13. One wherein the blow-off is made in the side of the distended chamber by cutting away a part of the enlarged portion 15, one showing a blow-off on the top, and the other on the bottom of the enlarged portion, thus providing, respectively, a side, a top, or a bottom blow-off, as may be desired. The webs 18 serve, when a top or a bottom blow-off is made, to hold the parts of the cap or hood integral, as shown in two of the views in Fig. 3.

It will be readily seen that by reason of

the peculiar shape of the blank casting from which the hood or cap is made, a finished cap or hood having either a side, a top, or a bottom blow-off, may be made from the same blank form, thus avoiding the necessity of having three forms of castings on hand.

After the parts of the valve have been assembled, as shown in Fig. 2, it is customary to adjust the valve to the particular pressure required. When this has been accomplished by screwing down the cap or hood 13, a screw-threaded opening 20, is made through the flange 14, into the edge 12, of the pipe portion 1. Into this opening is set a small screw 21, for the purpose of holding the cap or hood in tensioned position. By reason of this construction, the valve may be taken apart for cleaning or other purposes, and reassembled and set to the exact tension at which the valve was set at the factory.

Having thus described my invention, what I claim and desire to secure by Letters Patent of the United States, is:—

1. A blank form for a tensioning cap or hood for safety-valves, consisting of a contracted top portion and a contracted bottom portion, and an enlarged intermediate portion having therein a series of vertically extending webs integral therewith, substantially as shown.

2. A blank form for a tensioning cap or hood for safety-valves, consisting of a contracted top portion and a contracted bottom portion, and an enlarged intermediate portion having therein a series of radially set vertically extending webs integral therewith, substantially as shown.

3. A tensioning cap or hood for safety-valves, consisting of contracted top and bottom portions, an enlarged intermediate portion, a series of vertical webs in said enlarged portion integral with said top and bottom portions, and a blow-off in said enlarged portion.

4. A tensioning cap or hood for safety-valves consisting of a contracted top portion closed at its upper end, a contracted bottom portion open at its lower end, an enlarged intermediate portion, a series of vertical webs in said enlarged portions integral with said top and bottom portions, and a circumferential blow-off in said enlarged portion.

5. In combination with a safety-valve, a tensioning cap or hood having contracted top and bottom portions, and an enlarged intermediate portion, a series of integral radially set webs therein, and a circumferential blow-off in said enlarged portion, and means in the bottom portion for securing said cap or hood in position on the safety-valve.

In testimony whereof I affix my signature, in presence of two witnesses.

MILTON A. HUDSON.

Witnesses:

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