

No. 682,393.

Patented Sept. 10, 1901.

J. A. THOMPSON.

SAFETY VALVE.

(Application filed Apr. 20, 1901.)

(No Model.)

Fig. 1.

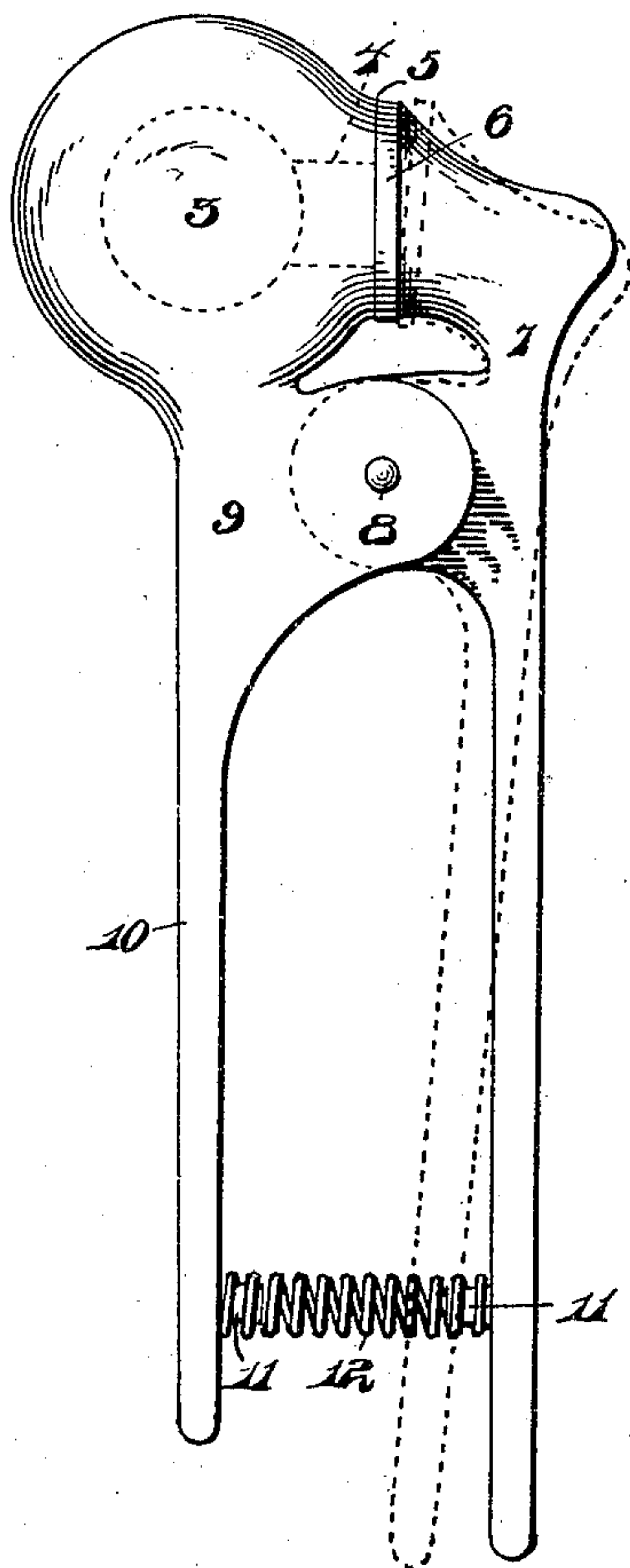
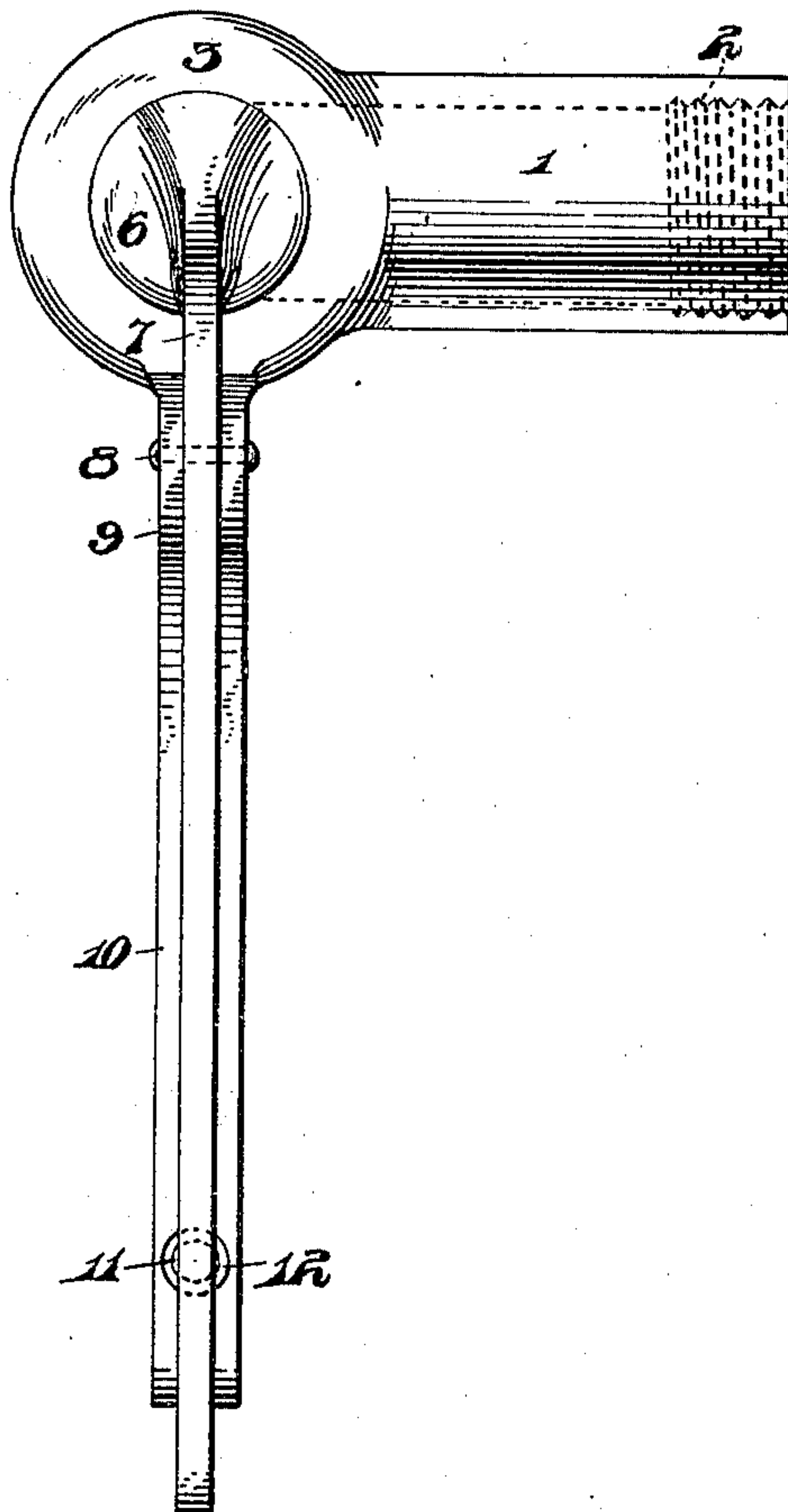


Fig. 2.



Witnesses:

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# UNITED STATES PATENT OFFICE.

JACOB A. THOMPSON, OF McDONALD, PENNSYLVANIA.

## SAFETY-VALVE.

SPECIFICATION forming part of Letters Patent No. 682,393, dated September 10, 1901.

Application filed April 20, 1901. Serial No. 56,690. (No model.)

*To all whom it may concern:*

Be it known that I, JACOB A. THOMPSON, a citizen of the United States of America, residing at McDonald, in the county of Washington and State of Pennsylvania, have invented certain new and useful Improvements in Safety-Valves for Steam-Boilers, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in blow-off valves, and more particularly to that class that are employed in connection-boilers, and wherein when a certain pressure of steam has been obtained the valve will automatically open and allow the excess pressure to escape.

15 The invention has for its further object to provide novel means to normally close the valve when the pressure in the boiler has been reduced to the desired degree.

20 A still further object of the invention is to construct a valve of this character that will be extremely simple in construction, strong, durable, and comparatively inexpensive to manufacture.

25 With the above and other objects in view the invention consists in the novel combination and arrangement of parts to be hereinafter more fully described, and specifically pointed out in the claims.

30 In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference indicate like parts throughout both views, in which—

35 Figure 1 is a side elevation of my improved valve. Fig. 2 is a top plan view thereof looking in the direction of the arrow in Fig. 1.

40 In the drawings the reference-numeral 1 indicates a sleeve, which is interiorly screw-threaded, as shown at 2, and connected to the boiler. Formed integral with said sleeve is an enlarged valve-casing 3, having an opening 4 formed therein, through which the exhaust-steam is allowed to escape. A seat 5 is formed in the valve-casing, this seat being preferably ground, and is adapted to receive the ground valve 6, the said valve forming a portion of the arm 7, which is pivotally connected at 8 to the casing 9, having formed integral therewith an arm 10. Inwardly-extending lugs 11 are placed upon the arms 7 and 10, and to these lugs is attached a spiral spring 12, which normally closes the valve 6.

55 This spring is of sufficient strength to retain

the valve in a closed position under a certain pressure in the boiler; but when said pressure becomes too great in the boiler the arm 7 will operate, as indicated in dotted lines in Fig. 1, and allow the steam to exhaust through the opening 4, thereby depressing the spring until the steam-pressure in the boiler is again normal, whereupon the valve will automatically close by the action of the spring expanding to its normal position.

65 Blow-off valves of the ordinary type often become corroded and will stick, which will render the valve inoperative and render the same entirely useless for the purpose designed and in many instances cause serious accidents by reason of their inoperativeness. The present invention overcomes all these difficulties and offers still further advantages of being constructed in such a manner that will permit the parts to be easily cleaned and again placed in their operative position.

75 The many advantages obtained by the use of my improved valves will be readily apparent from the foregoing description, taken in connection with the accompanying drawings.

80 It will be noted that various changes may be made in the details of construction without departing from the general spirit of my invention.

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

1. In a valve, the combination of an enlarged valve-casing having formed therein an exhaust-opening, an arm, a valve formed integral with said arm, an arm secured on said casing, and a spring interposed between said arms to normally retain the said valve in the closed position.

2. In a blow-off valve, the combination of an enlarged valve-casing having formed therein an exhaust-opening and valve-seat, an arm, a valve secured to said arm operating in said seat, a casing carried by said valve-casing, pivotal connections between said arm and said valve-casing, an arm formed integral with said casing, and a spring interposed between said arms to normally close the valve, substantially as described.

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

JACOB A. THOMPSON.

Witnesses:

LOUIS KESLER,  
J. B. DETRY.