

No. 811,813.

PATENTED FEB. 6, 1906.

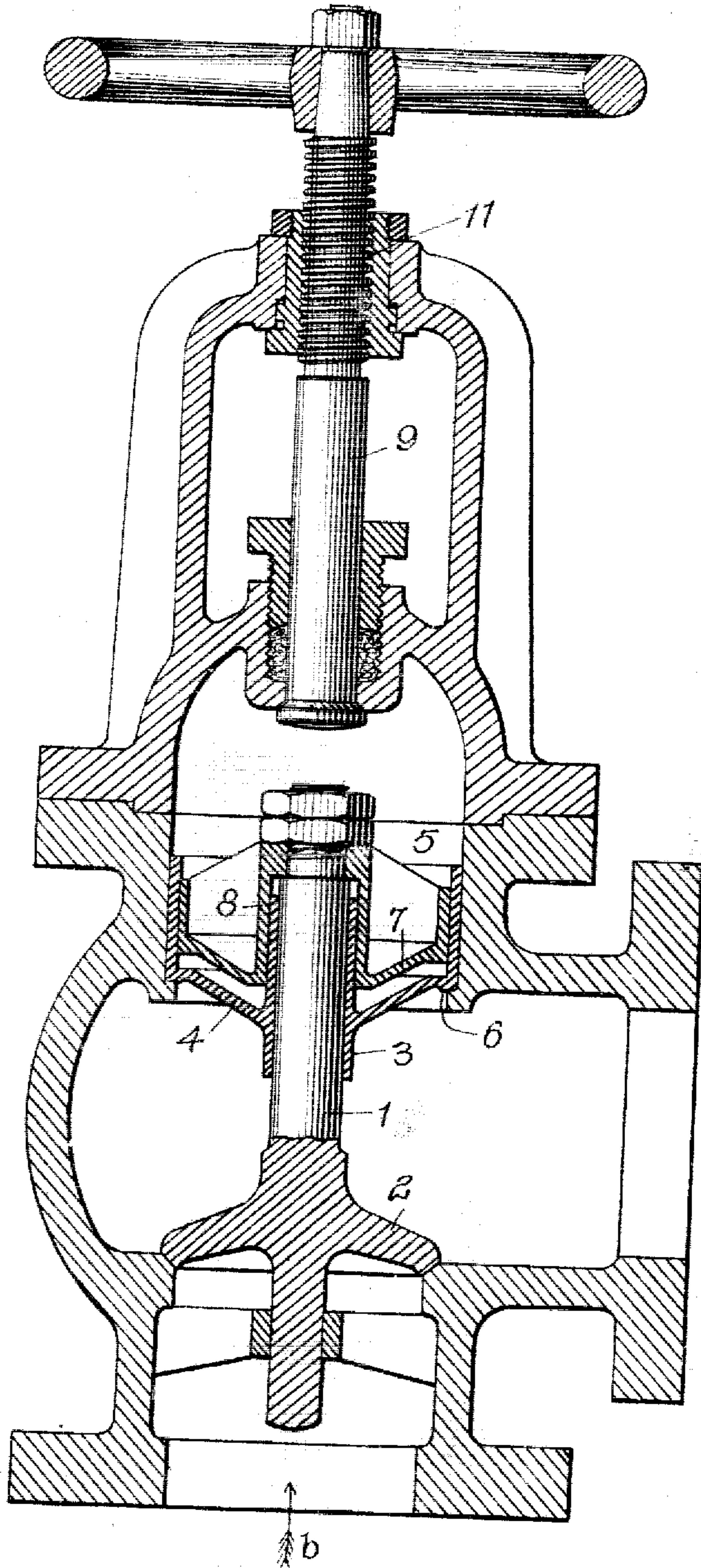
E. V. ANDERSON.

VALVE.

APPLICATION FILED DEC. 30, 1904.

2 SHEETS-SHEET 1.

FIG. 1.



WITNESSES:

Herbert Bradley.
Fred Hirschner

INVENTOR

Edward V. Anderson,
by Christie & Christie Attys

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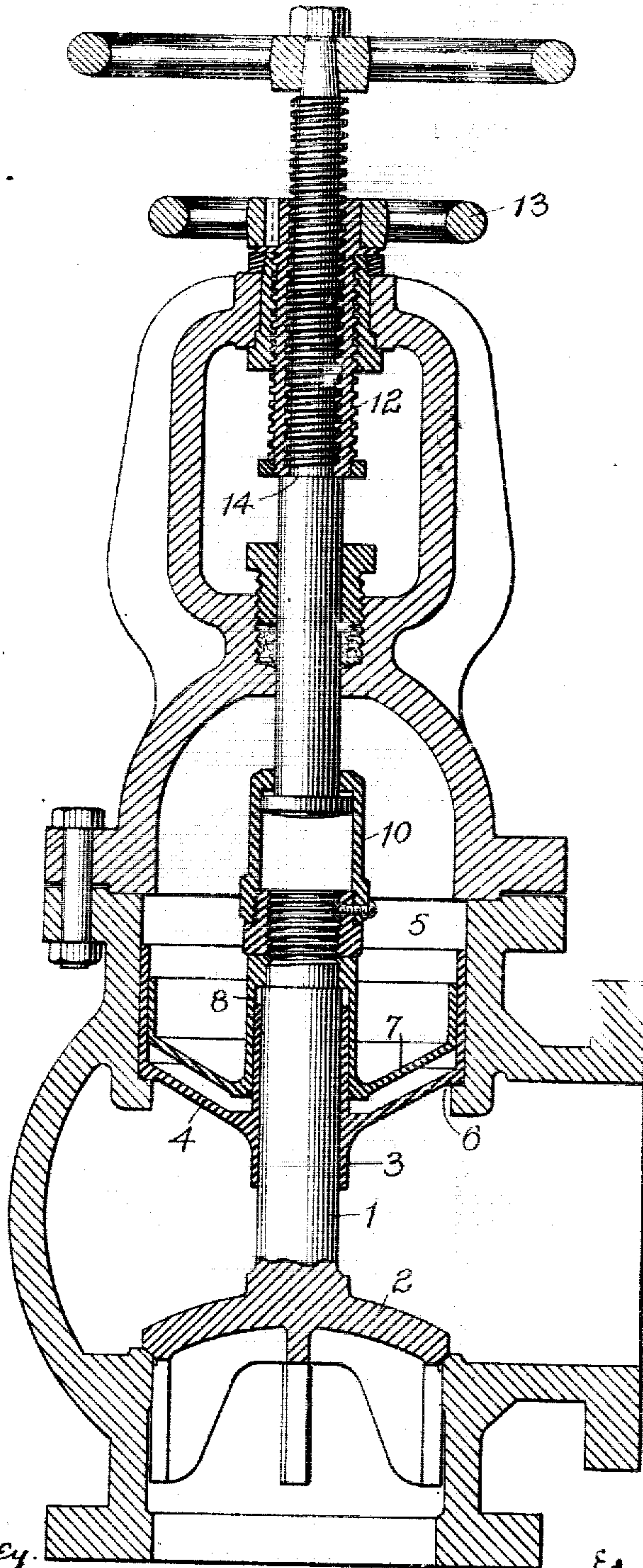
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2 SHEETS—SHEET 2.

FIG. 2.



WITNESSES:
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UNITED STATES PATENT OFFICE.

EDWARD V. ANDERSON, OF PITTSBURG, PENNSYLVANIA.

VALVE.

No. 811,813.

Specification of Letters Patent.

Patented Feb. 6, 1906.

Application filed December 30, 1904. Serial No. 239,005.

To all whom it may concern:

Be it known that I, EDWARD V. ANDERSON, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Valves, of which improvements the following is a specification.

The invention described herein relates to certain improvements in check or non-return valves for fluids.

The principal source of trouble in the employment of check-valves has been that the valve becomes suddenly seated, striking a sharp blow, which is sometimes sufficient to break or so injure the valve as to prevent its performing its proper function.

The object of the invention described herein is to provide means for preventing the sudden blow or seating of the valve, while not interfering with its proper movement to prevent the return or back flow of fluids.

The invention is hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a sectional view of the valve embodying my improvement, and Fig. 2 is a similar view showing in addition to the construction illustrated in Fig. 1 means for starting the valve from its seat in case of its becoming stuck thereto.

In the practice of my invention the stem 1 of the valve 2, which controls the flow of fluid in the direction of the arrow *b*, extends up through a sleeve 3, preferably formed integral with a cup-like piston 4, arranged in a chamber 5 at one side of the main passage of the valve. This piston is prevented from passing down into the passage through the valve by a shoulder 6. A cup-like piston 7 is arranged within the piston 4 and is connected by a sleeve 8 to the stem 1 of the valve, so as to move up and down within the piston 4 with the stem 1. When liquid flows in the direction of the arrow *b*, the valve will be raised from its seat until checked by means of an adjustable rod 9, having a threaded portion screwing through a threaded sleeve 11 in the top of the valve. The pressure of the

fluid in the main passage of the valve will at first force up the piston 4, if it has not been carried up by friction with stem 1 of the valve, and as such pressure is reduced the piston 4 will gradually drop until it rests on the shoulder 6. This movement of the piston 4 is independent of the valve, its stem, or the piston 7. As the valve returns to its seat a fluid cushion will be formed between the pistons 4 and 7, and by the gradual escape of this fluid the valve will be allowed to take its seat without shock or jar.

It sometimes happens that the valve will stick to its seat, and in order to release the valve and readjust the stop, which determines the automatic opening of the valve without employing an outside indicator, provision is made for connecting the valve-stem, as by a coupling 10, to the stop-rod 9, said coupling being made sufficiently long to permit a movement of the valve and its stem independent of the stop-rod. The threaded portion of the stop-rod passes through an internally-threaded sleeve 12, which is also externally threaded, so as to screw through a threaded opening in the valve. By screwing the rod through the sleeve the valve can be held to its seat or its opening movement regulated. In case the valve sticks the sleeve is rotated, thereby exerting a pull on the stop-rod and through the coupling to the stem of the valve pulling the latter from its seat. After the valve has been released the sleeve is screwed into the casing until a stop, as the hand-wheel 13, abuts against the valve-casing. When the sleeve has reached this position, the stop-rod will be so adjusted that the valve can be seated. When the stop-rod is connected by the coupling to the valve-stem, provision is made as against raising the stop-rod so high as to lift the valve from its seat. To this end the sleeve is made of such a length that when screwed fully into the casing a shoulder 14 on the stop-rod will bear against the end of the sleeve before the stop-rod is moved out far enough to shift the valve.

I claim herein as my invention—

1. A check or non-return valve mechanism having in combination a valve, a hollow pis-

ton movable with and independent of the valve, a second piston connected to the valve and arranged within the hollow piston, substantially as set forth.

- 5 2. A check or non-return valve mechanism having in combination a valve, a piston movable with and independent of the valve, a stop for limiting the movement of the piston

and a second piston connected to the valve, substantially as set forth. 10

In testimony whereof I have hereunto set my hand.

EDWARD V. ANDERSON.

Witnesses:

CHARLES BARNETT,
FRED KIRCHNER.