

(No Model.)

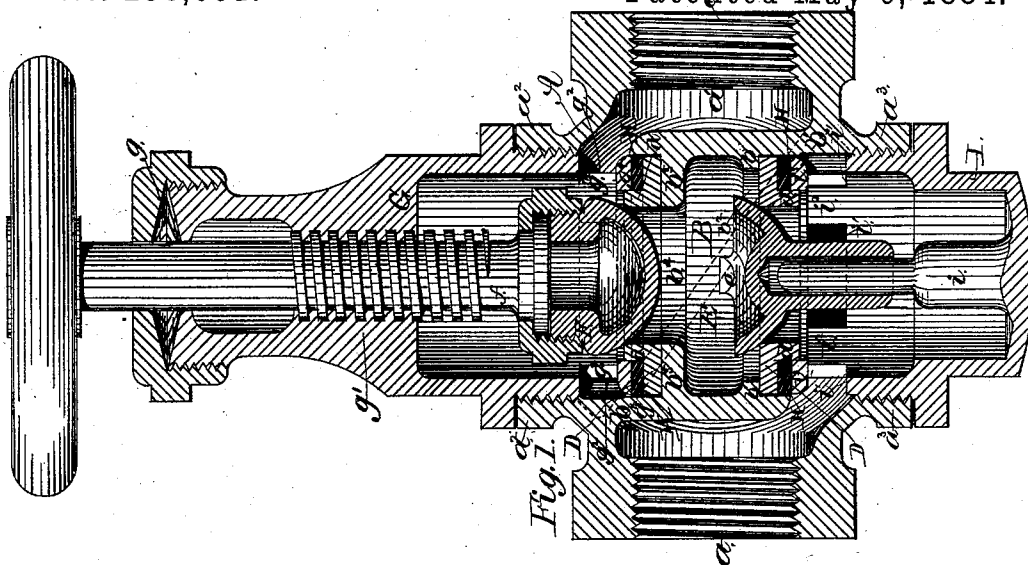
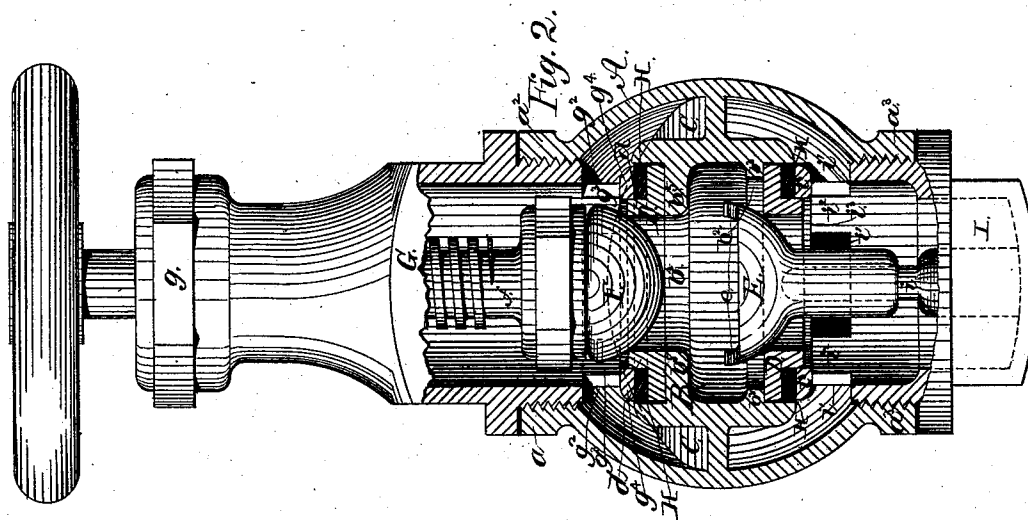
2 Sheets—Sheet 1.

J. H. BLESSING.

COMBINED CHECK AND STOP VALVE.

No. 298,061.

Patented May 6, 1884.



Witnesses:

S. B. Brewer,
Henry A. Goffe.

Inventor:

J. H. BLESSING,
by

William H. Dow,

Attorney.

(No Model.)

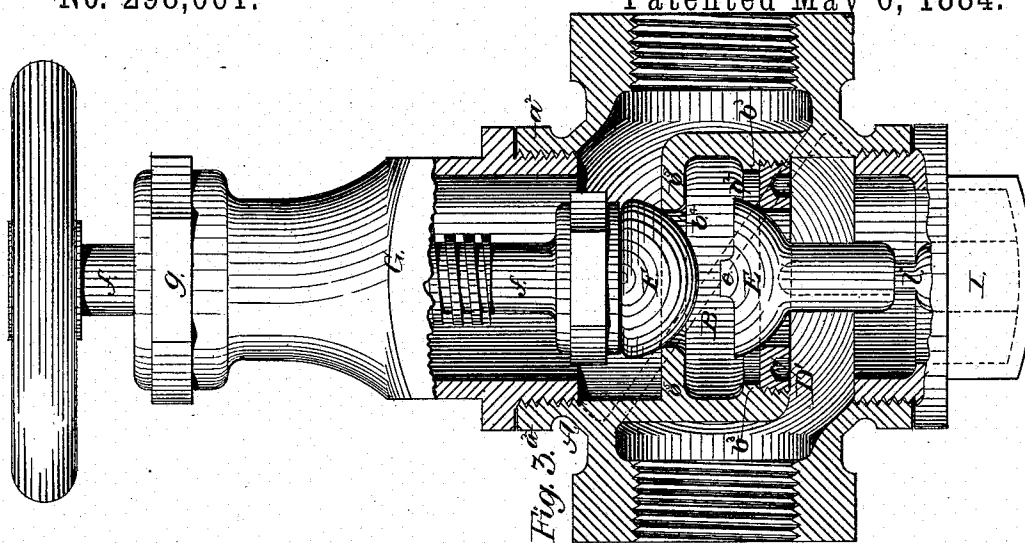
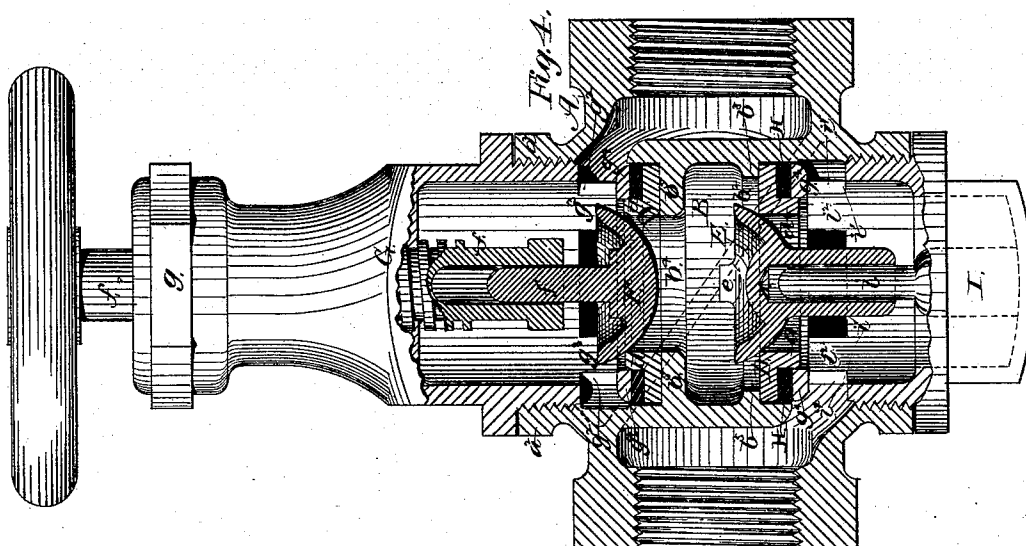
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Witnesses:

S. B. Brewer,
Henry A. Coffey,

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by

William H. Low,

Attorney.

UNITED STATES PATENT OFFICE.

JAMES H. BLESSING, OF ALBANY, NEW YORK.

COMBINED CHECK AND STOP VALVE.

SPECIFICATION forming part of Letters Patent No. 298,061, dated May 6, 1884.

Application filed December 6, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. BLESSING, of the city and county of Albany, in the State of New York, have invented certain new and useful Improvements in Combined Check and Stop Valves, of which the following is a specification.

My invention consists of a novel construction of the valve-casing and the arrangement of the valves one above the other; and it also consists in providing said valve-casing with valve-seats that are both renewable and interchangeable, as hereinafter set forth.

The object of my invention is to combine in one device a check and stop valve, and by providing the casing with renewable valve-seats to avoid the necessity of removing the valve-casing from a line of pipe when, by use or other cause, the valve-seats become impaired. I attain these objects by means of the construction illustrated in the accompanying drawings, which form part of this specification, and in which—

Figure 1 is a longitudinal section of a valve containing my improvements, the screw-stem being shown in elevation; Fig. 2, a transverse section through the center line of the same, the valves and parts of the screw-stem and bonnet being shown in elevation; and Figs. 3 and 4, longitudinal sections of two modifications of my invention.

As represented in the drawings, A is the valve-casing, made in globe form, and provided with induction-nozzle *a*, eduction-nozzle *a'*, upper branch, *a''*, and lower branch, *a'''*. Said valve-casing contains, as an integral part of it, an inner cylindrical valve-chamber, B, that is joined to said casing by its upper end, as at *b*, at the induction side, and by its lower end, as at *b'*, at the eduction side of the valve-casing. An inclined partition, C, formed between the casing A and the exterior wall of the chamber B, also connects the two parts, and produces a perfect separation of the induction from the eduction openings, excepting a passage through the chamber B, obtained by reason of the opening *b''*, formed by the lower annular flange, *b''*, and by the opening *b'''*, formed by the upper annular flange, *b'''*.

As shown in Figs. 1, 2, and 4, the valve-casing is provided with renewable valve-seats

D, that are detachable from the casing. Each of said valve-seats is composed of a flat annular metallic flange having a short cylindrical flange, *d*, on one of its flat surfaces, the inner diameter of the cylindrical flange forming a continuation of the opening through the valve-seat.

As shown in Fig. 3, the removable seats are dispensed with, the flange *b''* of the inner chamber, B, forming the upper valve-seat, and an annulus, D', screwed into the chamber B beneath the flange *b''*, forming the lower valve-seat.

E is the lower valve, which—in all the different constructions shown—serves as a check-valve, and is a well-known variety of the puppet-valve. Said lower valve is provided with ears *e*, which strike against the under side of the flange *b''* and limit the lift of the valve.

F is the upper valve, which—in the first three figures of the drawings—is attached, by means of a revoluble joint, to the lower end of the screw-stem *f* and forms the stop-valve of the device; but, as shown in Fig. 4, the valve F is separated from the screw-stem *f*, so as to adapt it to act either as a supplementary check-valve or as a stop-valve, and for this purpose the valve F is provided with a stem, *f'*, which—when acting as a check-valve—is guided by an opening formed in the lower end of the screw-stem *f*, the latter being so arranged that it can be screwed down to confine the valve F to its seat when in use as a stop-valve.

G is a cap or bonnet fitted to screw into the upper branch, *a''*, of the valve-casing. Said cap is provided with the usual stuffing-box, *g*, for the screw-stem *f*, and has an internally-screw-threaded portion, *g'*, that serves as a nut for the said screw-stem.

As shown in Figs. 1, 2, and 4, the lower part of the cap G has the form of a sleeve, which contains the openings *g''*, that communicate with the eduction-opening of the casing A. Said openings are separated by bars *g'''*, that connect with an annular flange, *g''*, which forms an integral part of the cap G, and which bears upon the upper elastic packing, H, for the double purpose of forming a tight joint at that point and securing the upper valve-seat D in place.

As shown in Fig. 3, the lower end of the cap

G terminates in the usual screwed portion for securing it to the casing A.

I is the cap for the lower branch of the casing A. It is provided with a guide, *i*, by means of which the lower valve, E, is guided, and, as shown in Figs. 1, 2, and 4, the upper part of said cap has the form of a sleeve, which contains the openings *i'*, that communicate with the induction-opening of the valve-casing. The bars *i''* separate said openings and connect with the annular flange *i'''*, which bears against the lower elastic packing, H, and performs the same duty as hereinbefore described in respect to the flange *g'* of the upper cap.

In the modification shown in Fig. 3 the parts *i'*, *i''*, and *i'''* are dispensed with.

It will be seen that the upper and lower valve-seats D are formed exactly alike; but they are placed in reversed positions, so that the valves E and F have their bearings upon opposite sides of their respective valve-seats. By this arrangement, when the valve-seats become worn or cut on one face, the two seats may be interchanged, so as to present new bearings for the valves to seat on until the seats D, or either of them, become too worn for further use, when new ones can be inserted at a very slight cost.

I claim as my invention—

1. In a combined check and stop valve, the combination, with a valve-casing containing an inner valve-chamber and a partition—formed

between said casing and the wall of its inner valve-chamber—for separating the induction and eduction openings of said casing, the said inner valve-chamber being provided with two valve-seats arranged one above the other, as herein described, of two independent valves entirely disconnected from each other, and arranged as herein set forth, the lower of said valves being always free to operate as a check-valve, and the upper one being provided with means whereby it can be forcibly retained upon its valve-seat, as and for the purpose herein specified.

2. The combination, with a valve-casing, A, containing an inner valve-chamber, B, and a partition, C, formed as herein described, of the removable valve-seats D and caps G and I, constructed substantially as described, and adapted to secure the valve-seats D, as herein specified.

3. The combination, with a valve-casing, A, adapted to contain two independent valves, substantially as herein described, of the removable and interchangeable valve-seats D, each consisting of a flat annular flange provided with a cylindrical flange, *d*, as and for the purpose specified.

JAMES H. BLESSING.

Witnesses:

WM. H. LOW,

CHAS. WM. BACKUS.