

(No Model.)

2 Sheets—Sheet 1.

J. PFAU.
STOP VALVE.

No. 326,238.

Patented Sept. 15, 1885.

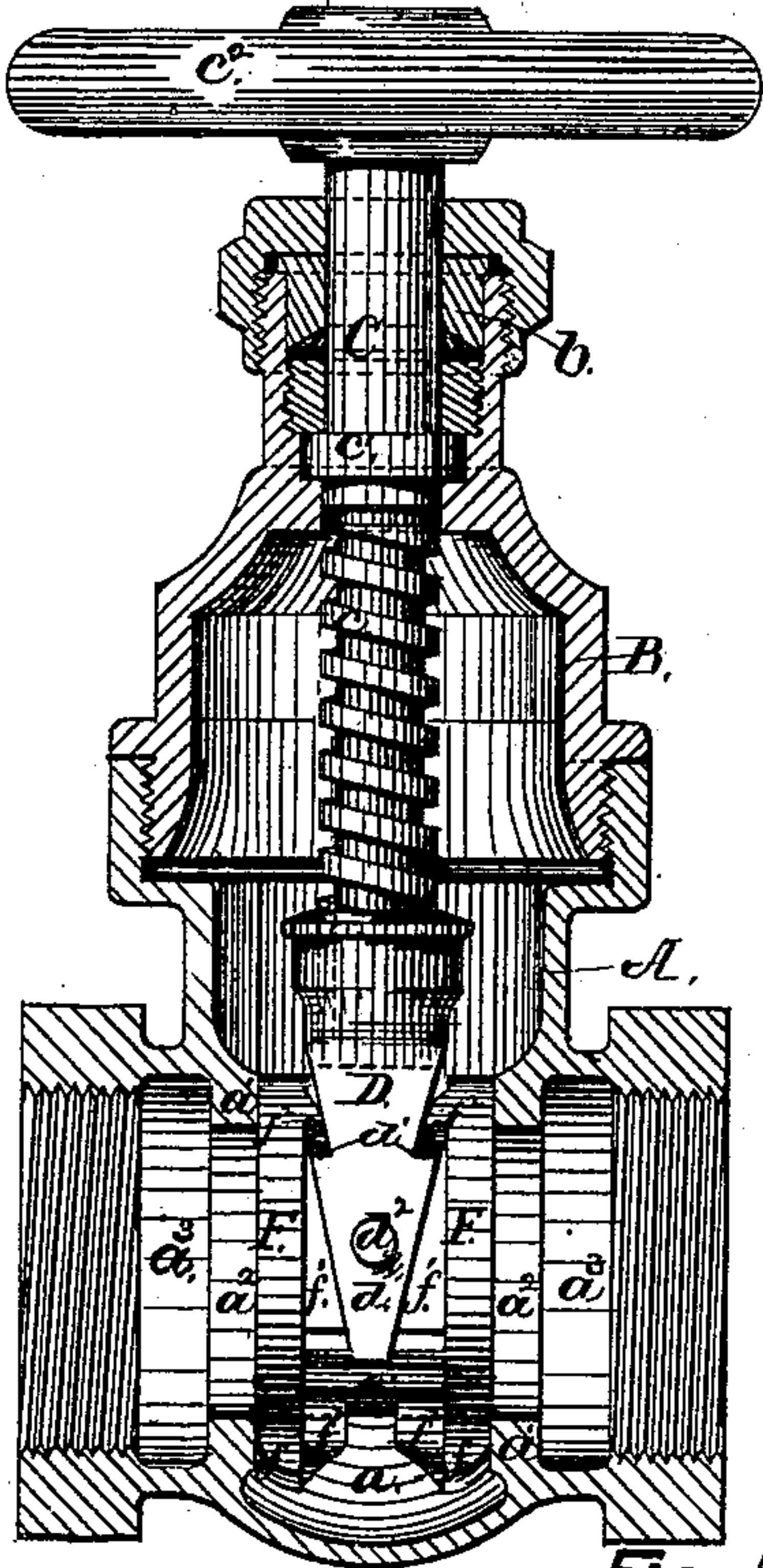


Fig. 1.

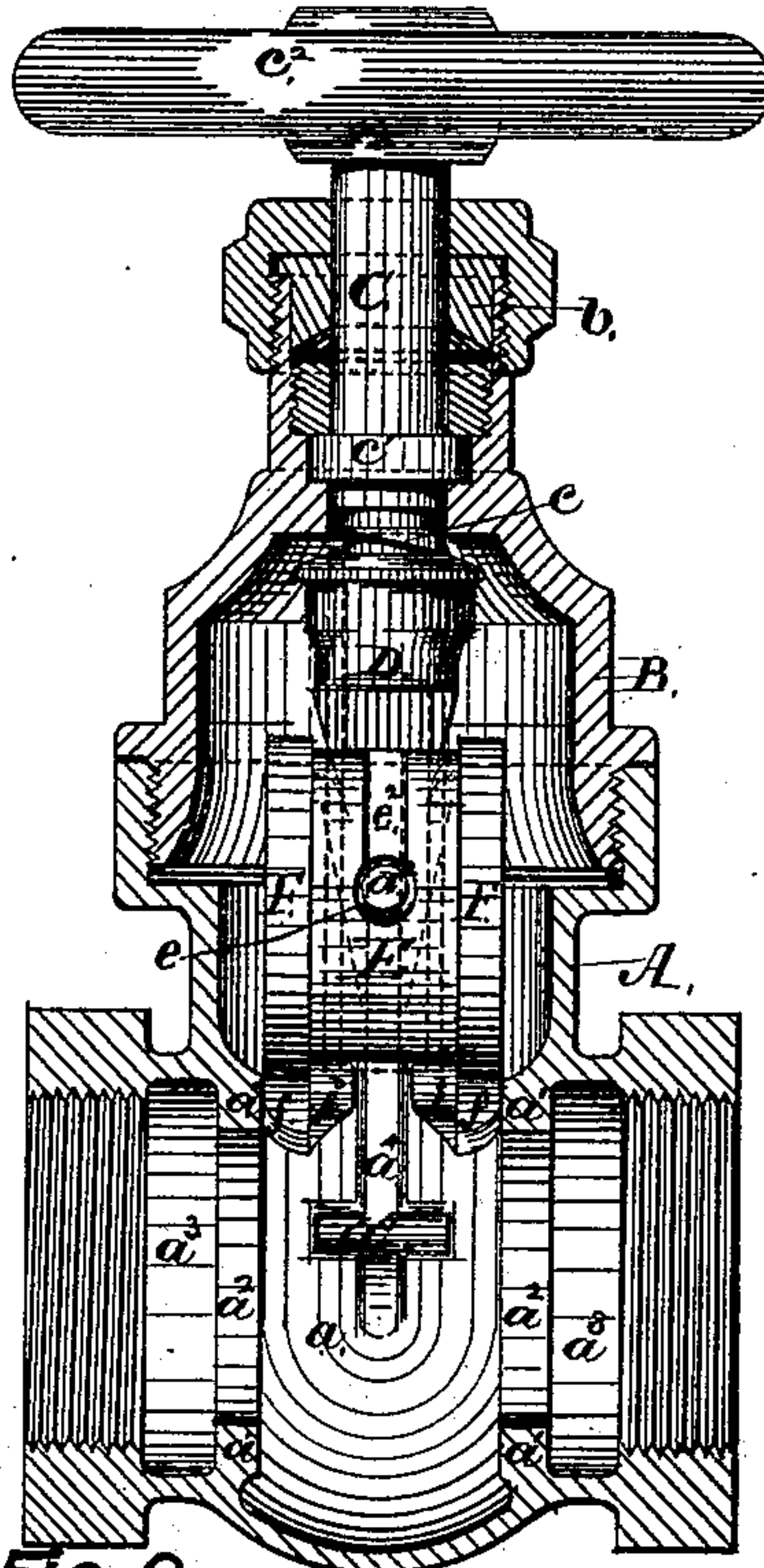


Fig. 2.

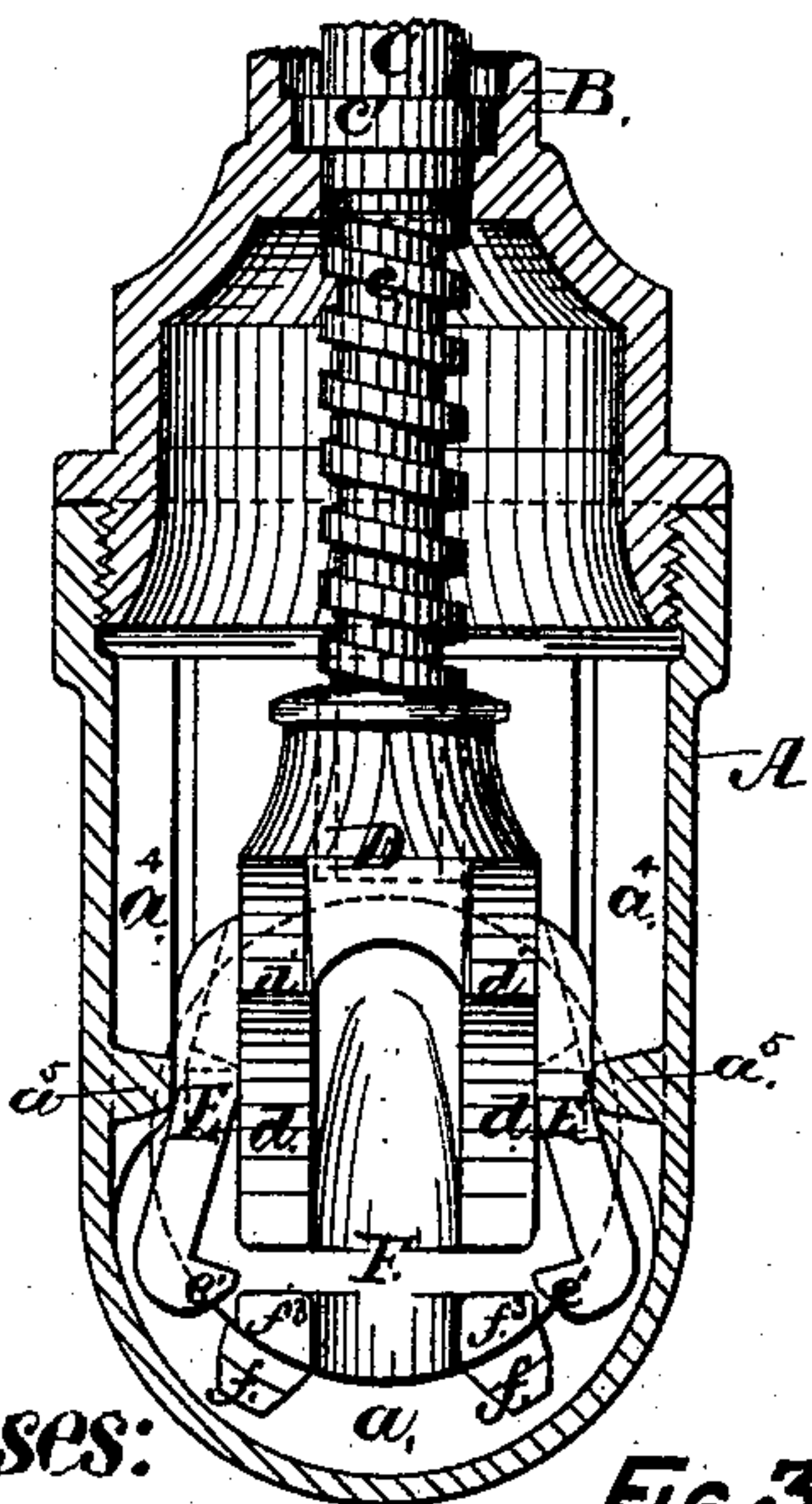


Fig. 3.

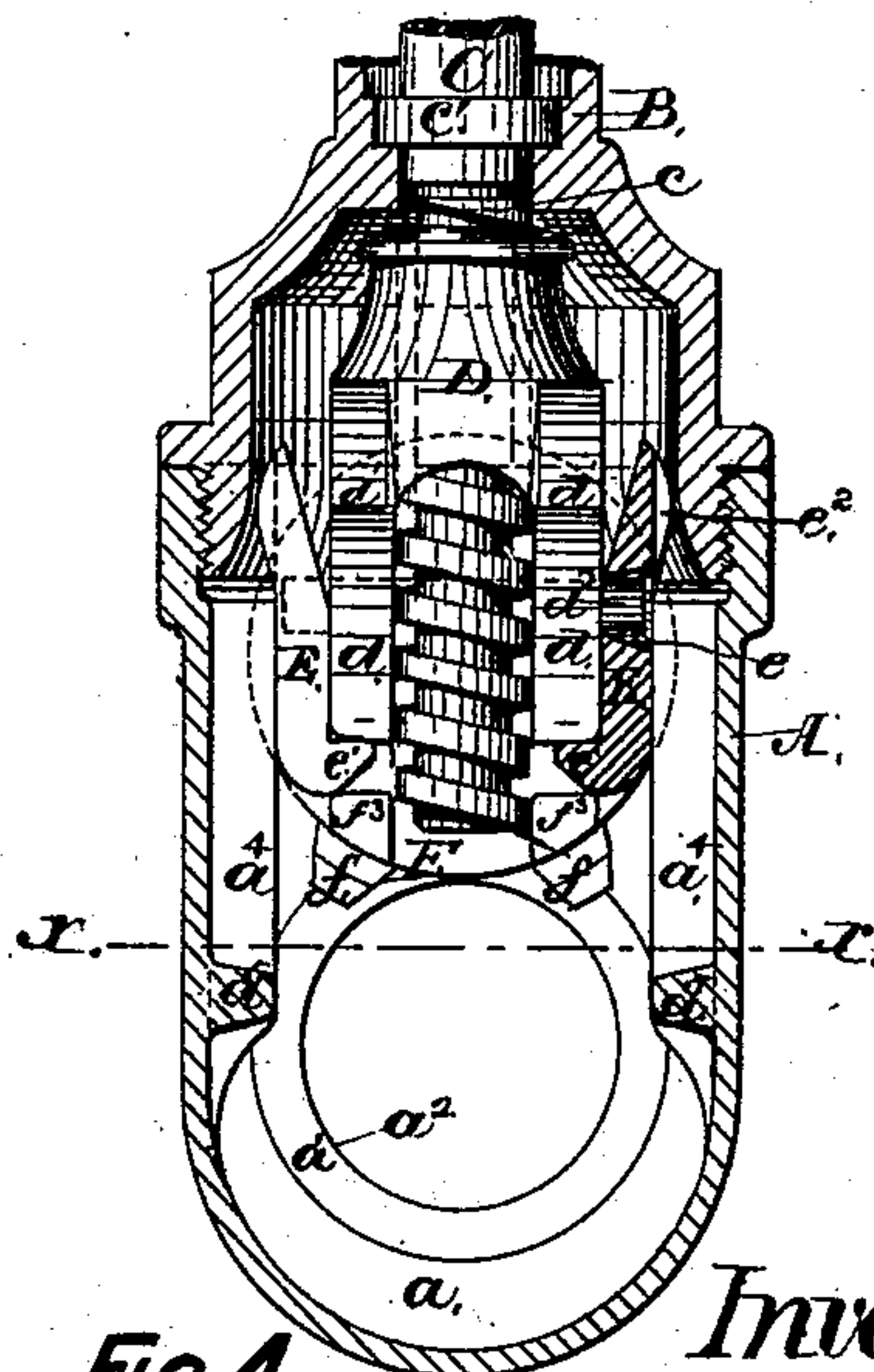


Fig. 4.

Witnesses:

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W. W. Seeley

Inventor:

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by William H. Low.

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(No Model.)

2 Sheets—Sheet 2.

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STOP VALVE.

No. 326,238.

Patented Sept. 15, 1885.

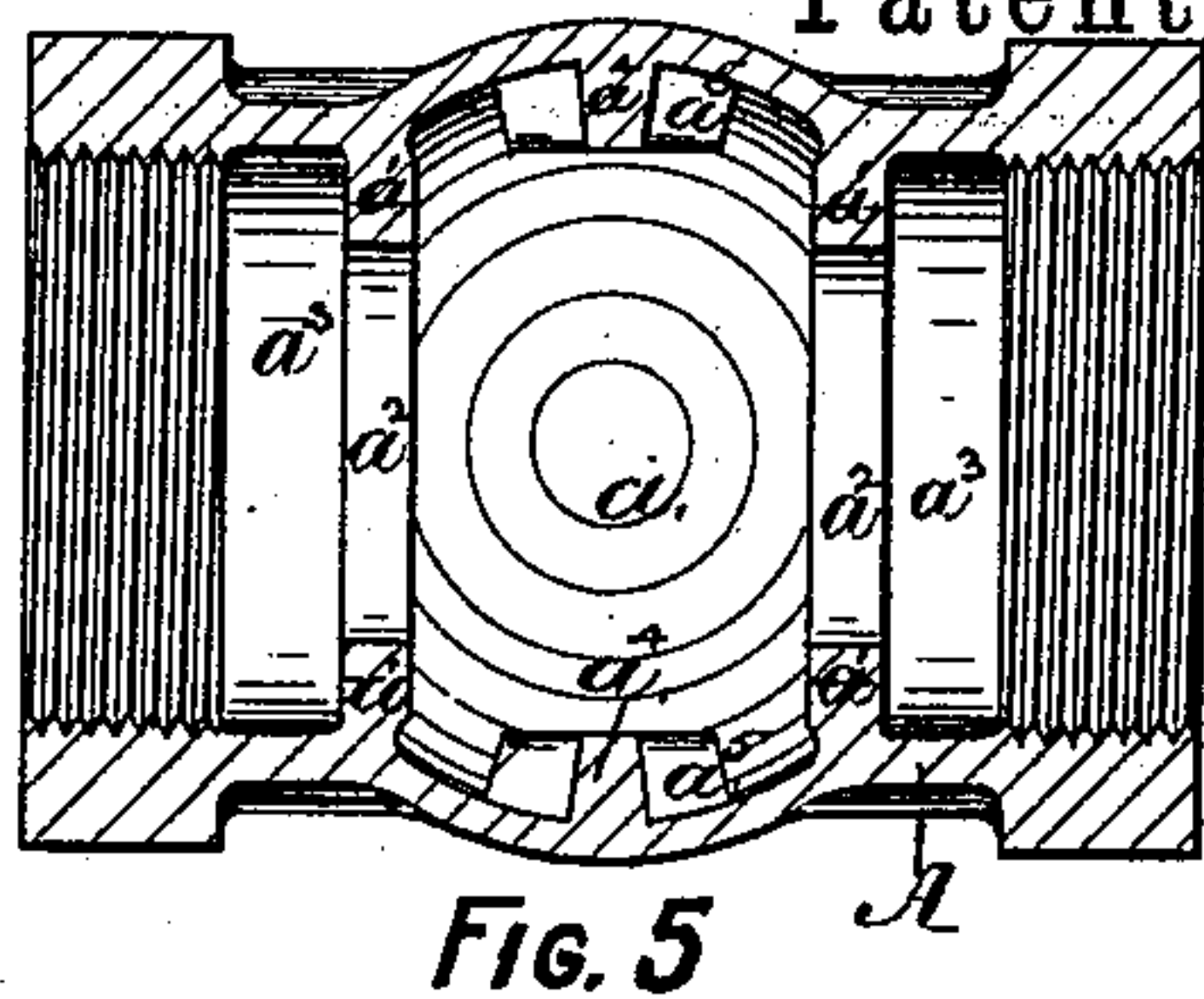


FIG. 5



FIG. 6.

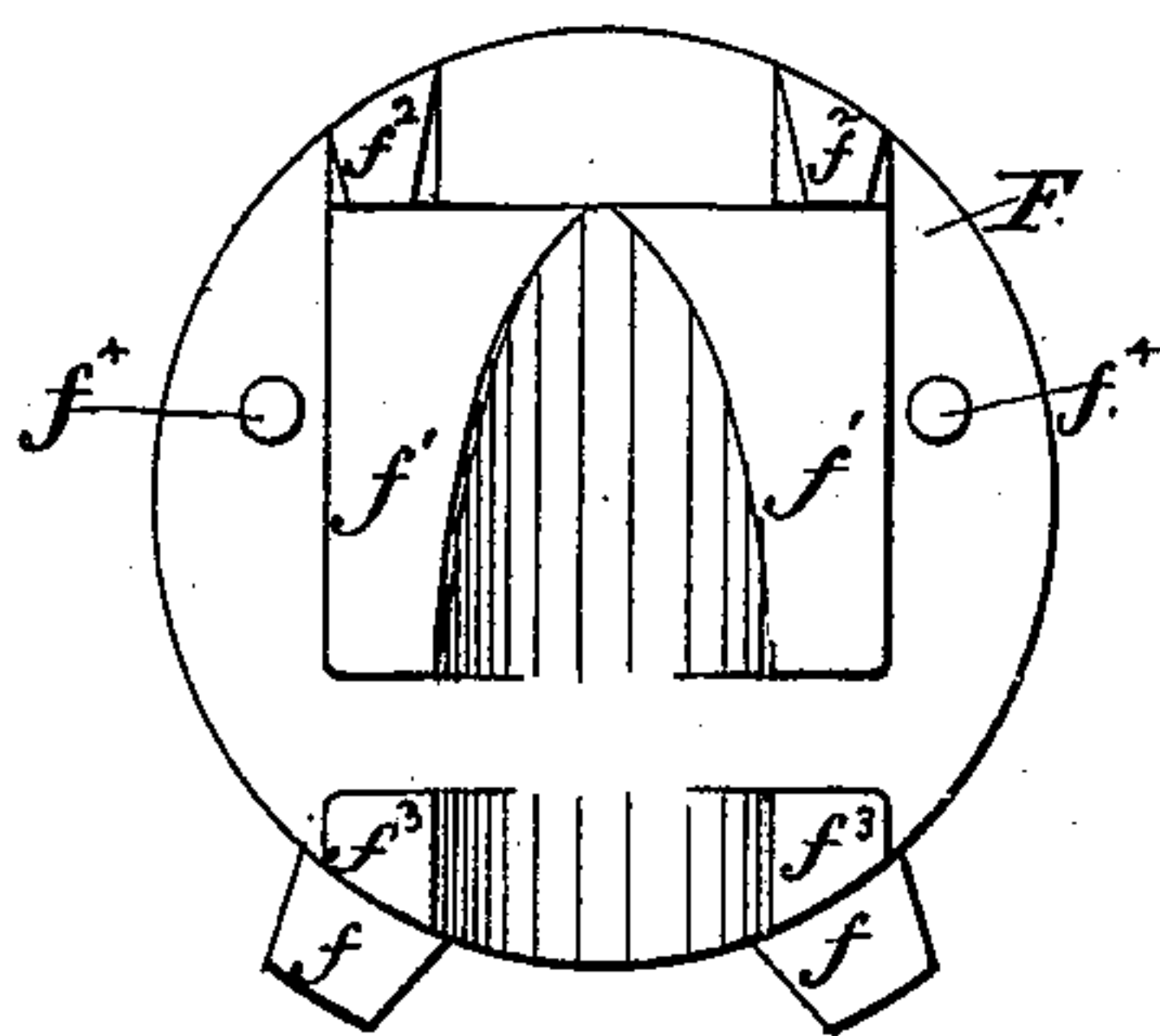


FIG. 7.

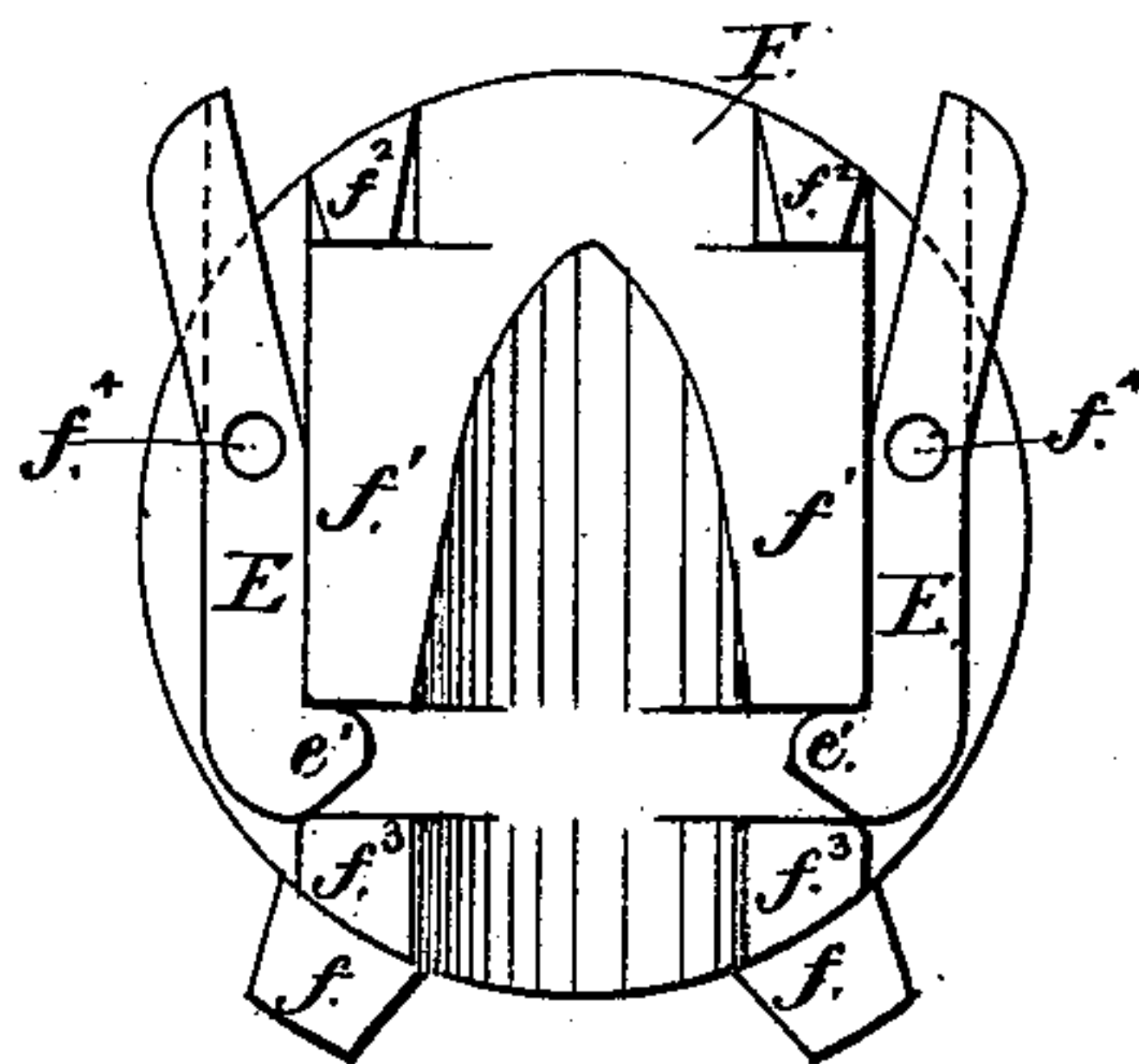


FIG. 8.

Witnesses:

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UNITED STATES PATENT OFFICE.

JULIUS PFAU, OF LANSINGBURG, ASSIGNOR OF ONE-HALF TO JAMES W. BLESSING, OF ALBANY, NEW YORK.

STOP-VALVE.

SPECIFICATION forming part of Letters Patent No. 326,238, dated September 15, 1885.

Application filed February 12, 1885. (No model.)

To all whom it may concern:

Be it known that I, JULIUS PFAU, of Lansingburg, in the county of Rensselaer and State of New York, have invented new and
5 useful Improvements in Stop-Valves, of which the following is a specification.

My invention relates to improvements in gate stop-valves, in which are combined a straight water-way, a central valve-chamber
10 having oppositely-located valve-seats, sliding gates arranged to move at right angles to the line of the water-way, and gate-spreading mechanism adapted to spread apart the sliding gates and press them tightly against the
15 valve-seats, so as to effectually close the water-way against the passage of fluids there-through.

One of the best-known defects in the class of stop-valves above referred to is the tendency of their gate-spreading mechanisms to prematurely spread apart the gates, to bear against the opposite valve-seats, before the said gates are moved sufficiently far to entirely cover over the openings through the valve-seats, thereby leaving the water-way partially
25 open after the gate-spreading mechanism has completed its function. This premature action of the gate-spreading mechanism may be produced by any cause that will create sufficient friction between the faces of the gates and valve-seats to stay the closing movement of the gates sufficiently to bring the gate-spreading mechanism into operation.

The object of my invention is to remedy the above-described defect, and I attain this object by means of the mechanism illustrated in the accompanying drawings, which, being herein referred to, form part of this specification, and in which—

40 Figure 1 is a longitudinal section of the valve-casing, showing the internal parts in elevation, with the valve in a closed condition, and one of the tilting dogs removed to expose underlying parts; Fig. 2, a like section showing the valve open. Figs. 3 and 4 are respectively transverse vertical sections of Figs. 1 and 2; Fig. 5, a horizontal section at the line
45 *xx* of Fig. 4; Fig. 6, an end elevation of one of the tilting-dogs; Fig. 7, a rear elevation of a modified form of sliding gate, and Fig. 8 the same with the tilting dogs attached.

As represented in the drawings, A indicates the valve-casing, which consists of the central valve-chamber, *a*, oppositely-arranged valve-seats *a'*, having openings *a²*, and nozzles *a³*,
55 which latter, with the openings *a²*, constitute the straight water-way of the device. The valve-chamber *a* is provided with oppositely-arranged vertical ribs *a⁴*, each of which has at its lower end a short horizontal rib, *a⁵*, whose
60 face is flush with that of its conjoining vertical rib.

The bonnet B forms a cap for the valve-chamber *a*, and is bored to receive the valve-stem C. The said valve-stem is provided with
65 a screw-threaded portion, *c*, and with a collar, *c'*, by which said stem is held in the bonnet B from acquiring an endwise movement. The valve-stem C passes out of the bonnet B, (through a stuffing-box, *b*,) and is provided
70 with a hand-wheel, *c²*, or other suitable appliance for rotating it.

The stirrup or lifter D is tapped to form a nut for the screwed portion *c* of the valve-stem, and the lower part of it (which is bifurcated to permit the lower end of the valve-stem to pass through) is formed into wedge-shaped terminals *d*, having at their upper ends shoulders *d'*. Pintles *d²* project laterally from the opposite edges of the stirrup D for
80 the purpose of carrying the tilting dogs E, which are fitted to receive a vibratile movement on said pintles. The said dogs have their bodies bent at an obtuse angle, as shown in Figs. 3, 4, and 8, and are provided at the
85 bend of the angle with holes *e*, which fit loosely on the pintles *d²*, and at their lower end with hooks *e'*, which are adapted to engage under the lower end of the stirrup D. A
90 groove, *e²*, is formed in the outer side of the upper part of each dog, and the bottom face of said groove is finished on the same plane with the outer face of the lower part of the dog. The outer faces of the lower part of the dogs E are fitted to bear against the face of
95 the vertical ribs *a⁴*, so as to force the hooks *e'* inwardly, when they will engage under the lower end of the stirrup D, as shown in Fig. 4. In accomplishing this the grooves *e²* fit over the ribs *a⁴*, so as to permit the dogs to
100 assume the positions shown in Fig. 4, in which positions the dogs will remain until they reach

the lower end of the ribs a^4 . When the stirrup D is forced down to very nearly the lower extremity of its movement, the inclined upper part of the dogs E will be brought into contact with the horizontal ribs a^5 , and thereby said dogs will be tilted so that their hooks e' will be moved out from under the lower end of the stirrup D into the position shown in Fig. 3.

The sliding gates F are preferably made in the form of disks, with spurs f projecting from their lower edges. Said spurs are adapted to strike against the lower part of the valve-casing, so as to prevent the sliding gates from being moved down far enough to uncover the upper part of the openings a^3 . The outer faces of the sliding gates F are fitted to form water-tight joints with the valve-seats a' , and their opposite faces are provided with inclined planes f' , stops f^2 , and snugs f^3 . The inclined planes f' are fitted to bear against the wedges d of the stirrup in such manner that said wedges will, when occasion requires, press apart the sliding gates and bring the faces of the latter into close contact with the valve-seats a' . The stops f^2 engage with the shoulders d' of the stirrup to effect the drawing up the sliding gates for the purpose of uncovering the water-way, and the snugs f^3 are adapted to engage with the under side of the hooks e' when the latter are in the position shown in Fig. 4, thereby locking the shoulders d' against the stops f^2 , and preventing the wedges d from acting against the inclined planes f' to produce a premature pressing apart of the sliding gates F before they reach the proper point in their movement to have that action occur.

When the gates are in the raised position shown in Figs. 2 and 4, they will be held quite free from the faces of the valve-seats a' , and said gates will then be sustained by their stops f^2 , which rest on the shoulders d' of the stirrup, and the dogs E will have their hooks e' thrown inwardly between the lower end of the stirrup D and the snugs f^3 . This position of the hooks e' will be maintained during the downward movement of the gates F until the latter have very nearly reached the lowest point of their movement, and thereby the faces of the gates will be kept entirely clear from the faces of the valve-seats, and so that the gates can be moved with perfect freedom either up or down. A moment before the gates F reach the extremity of the downward movement the inclined upper part of the dogs E will strike the ribs a^5 and cause the said dogs to

tilt on the pintles d^2 and retract the hooks e' from beneath the stirrup D. By the slight continued downward movement of the stirrup its wedges d will act against the inclined planes f' of the gates and cause the two gates to be pressed apart into close contact with the valve-seats a' , and thereby effectually closing the water-way of the device. The first upward movement of the stirrup D will cause the lower part of the dogs E to strike the ribs a^5 , thereby tilting said dogs back into their first position with their hooks e' engaged under the lower end of the stirrup D, as shown in Fig. 4.

In Figs. 7 and 8 a modified form of the gates F and dogs E is shown. In this modification the gates F are provided with two pins, f^4 , on their backs, in addition to the inclined faces f' , stops f^2 , and snugs f^3 , hereinbefore described. The dogs E have the hooks e' and groove e^2 hereinbefore described, and are provided on their opposite edges with holes e^3 , which fit upon the pins f^4 , so as to permit the said dogs to tilt in the manner above described.

When the gates and dogs are constructed in accordance with the above modification, the pintles d^2 will be omitted from the stirrup D, and the snugs f^3 may, when preferred, be omitted from the backs of the sliding gates F; but the operation of the several parts will be the same as hereinbefore described.

I claim as my invention—

1. The combination, with a valve-casing, A, having a valve-chamber, a , provided with the vertical ribs a^4 and horizontal ribs a^5 , as described, of the stirrup D, provided with wedges d , the sliding gates F, having inclined planes f' and snugs f^3 , and the tilting dogs E, provided with hooks e' , adapted to engage between the lower end of the stirrup D and the snugs f^3 , in the manner and for the purpose herein specified.

2. The combination, with valve-casing A, having a valve chamber, a , provided with vertical ribs a^4 and horizontal ribs a^5 , as described, of the stirrup D, sliding gates F, and tilting dogs E, the said dogs being provided with hooks e' , which are adapted to engage under the lower end of the stirrup D, as herein set forth, all of said parts being constructed and arranged to operate as and for the purpose specified.

JULIUS PFAU.

Witnesses:

WM. H. LOW,
S. B. BREWER.

Correction in Letters Patent No. 326,238.

It is hereby certified that the name of the assignee in Letters Patent No. 326,238, granted September 15, 1885, upon the application of Julius Pfau, of Lansingburg, New York, should have been written and printed *James H. Blessing* instead of "James W. Blessing"; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 22d day of September, A. D. 1885.

[SEAL.]

H. L. MULDROW,
Acting Secretary of the Interior.

Countersigned:

M. V. MONTGOMERY,
Commissioner of Patents.