

(No Model.)

J. H. BLESSING.
STRAIGHT WAY CHECK VALVE.

No. 281,438.

Patented July 17, 1883.

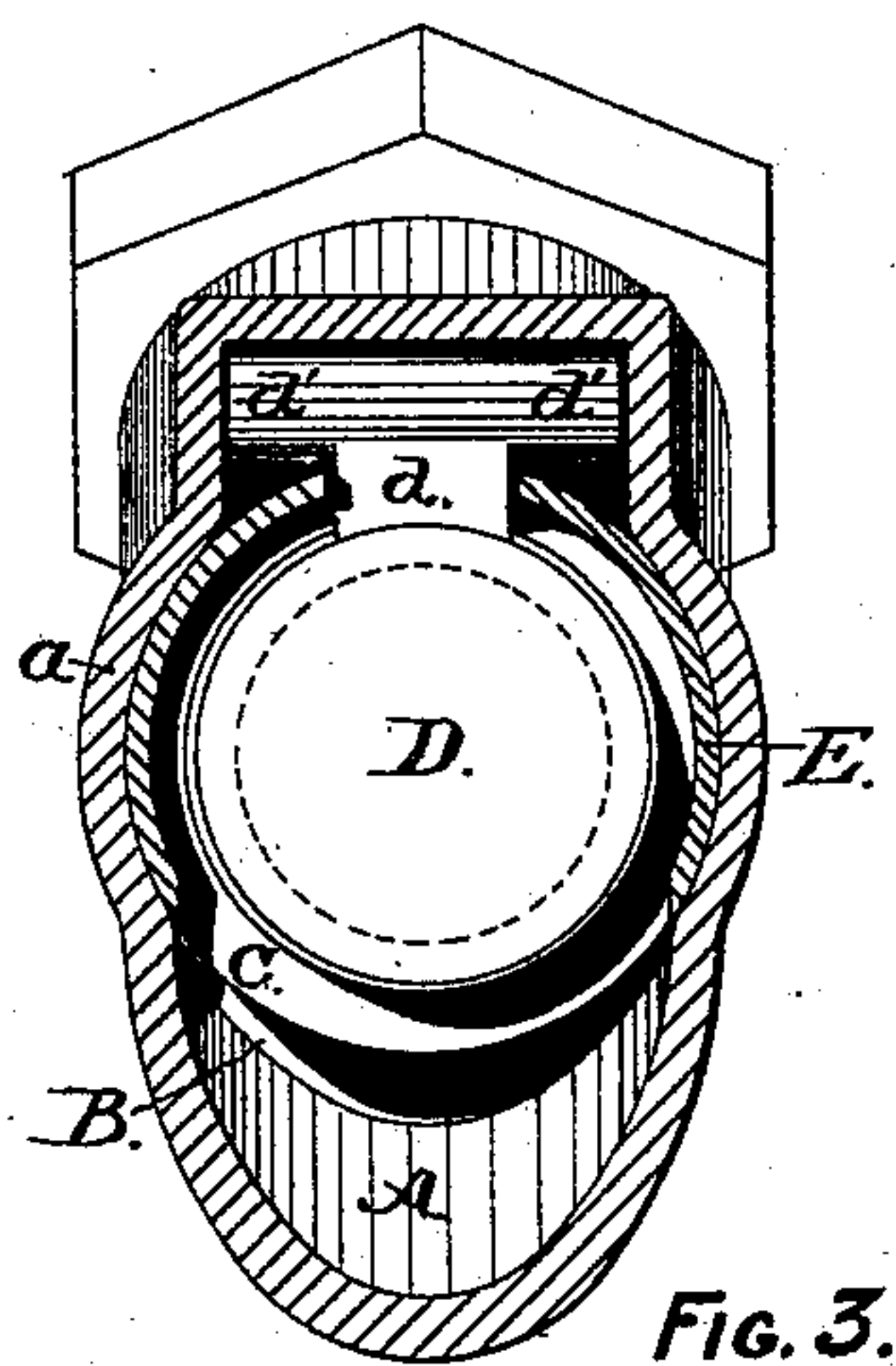


FIG. 3.

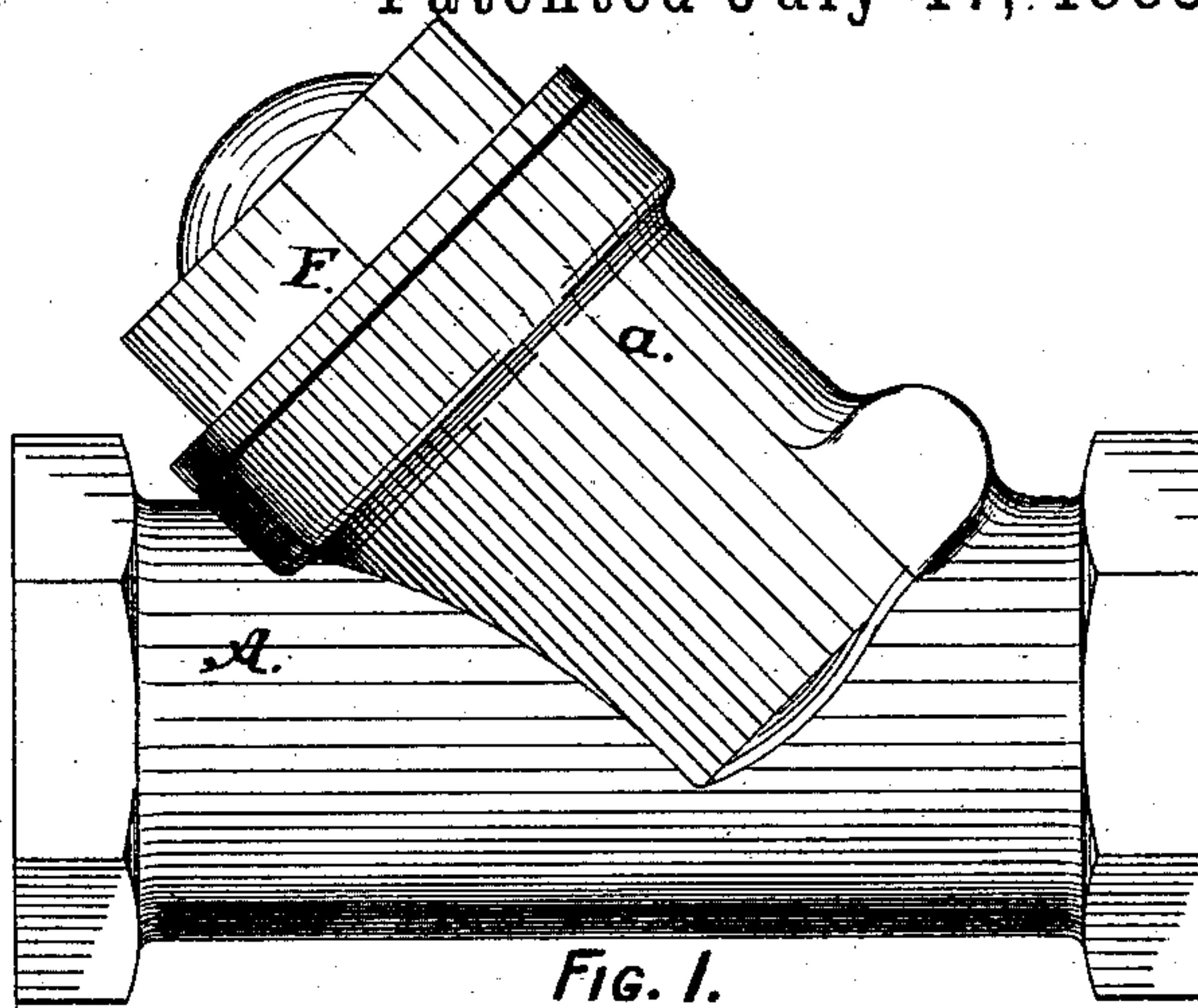


FIG. 1.

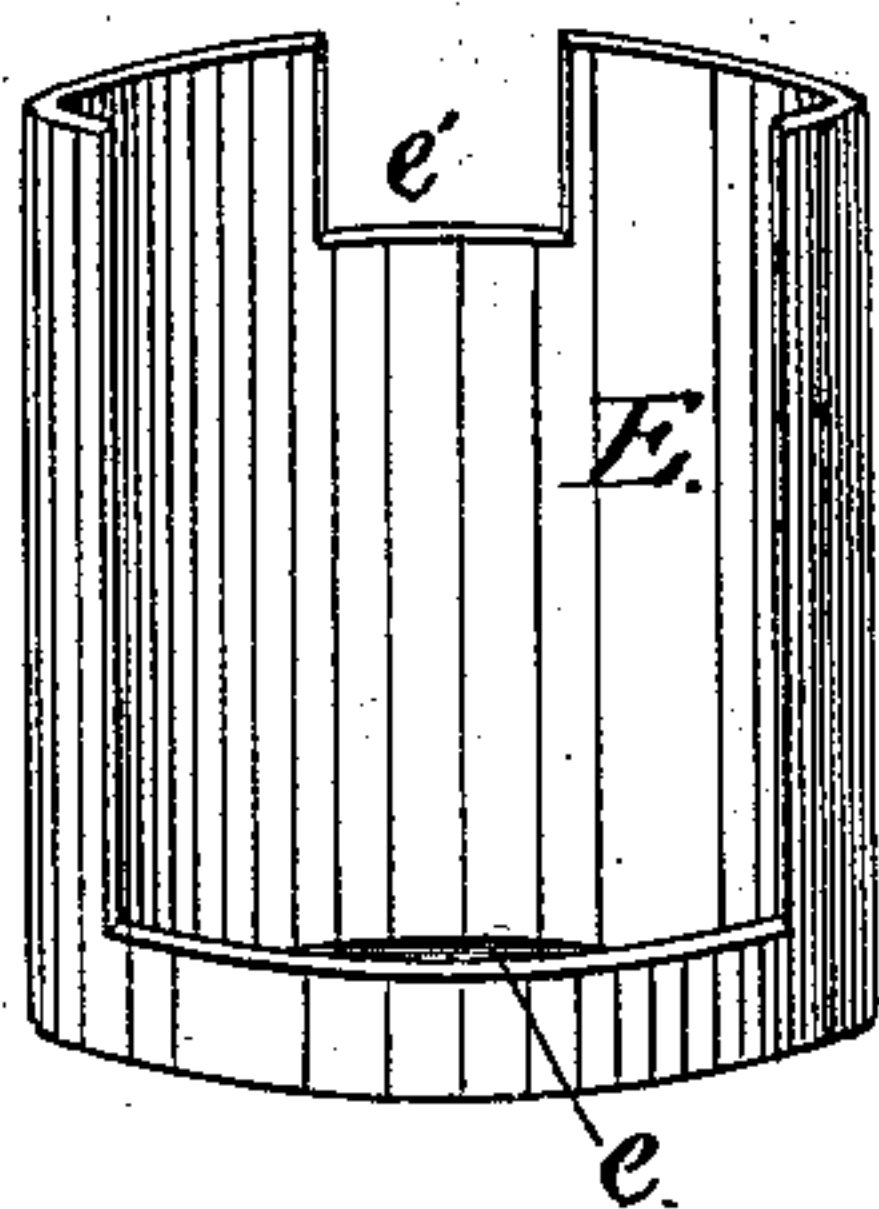


FIG. 4.

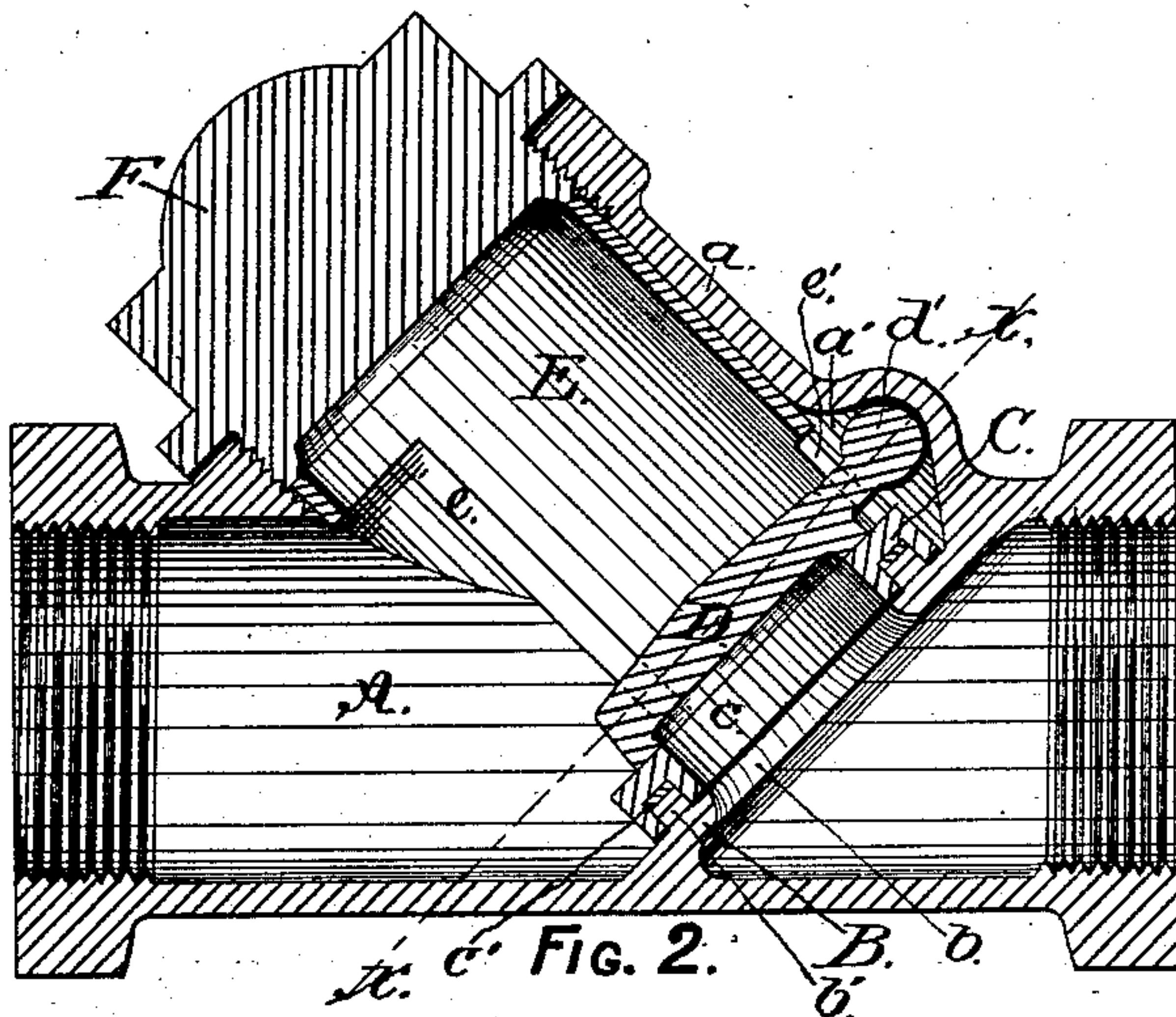


FIG. 2.

Witnesses:

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UNITED STATES PATENT OFFICE.

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STRAIGHT-WAY CHECK-VALVE.

SPECIFICATION forming part of Letters Patent No. 281,438, dated July 17, 1883.

Application filed April 23, 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
5 useful Improvements in Straight-Way Check-Valves, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form part of this specification, and in which—

10 Figure 1 is a side elevation of a valve containing my improvements; Fig. 2, a longitudinal section of the same; Fig. 3, a transverse section at the line *x x* of Fig. 2, and Fig. 4 a detached perspective view of the removable
15 retaining-sleeve.

My invention relates to improvements in straight-way check-valves; and it consists in constructing the several component parts and combining them in the manner shown in the
20 drawings, and as herein described.

The object of my improvements is to afford facilities for either renewing or repairing the inner parts of the device without removing the casing wherein they are contained from the
25 pipes to which it is secured.

As illustrated in the drawings, A is the valve-casing, adapted to be secured in a line of pipe by any of the usual and well-known means. In its longitudinal bore the said valve-casing
30 is provided with an inclined partition or diaphragm, B, which has an opening, *b*, formed therein. Said partition is provided on its upper face with an annular tongue, *b'*, that is made concentric to the opening *b*. An inclined
35 cylindrical chamber, *a*, that is perpendicular to the face of the diaphragm B, and whose center coincides with the center of the opening *b*, is formed on the upper side of the casing A. At or near the point of junction of the casing
40 A with the inclined chamber *a* a transverse recess, *a'*, is formed, for the purpose of receiving the trunnions of a clack-valve, as herein-after described.

C is a removable valve-seat, provided with
45 an opening, *c*, that corresponds to the opening *b'* in the diaphragm, and having an annular groove which is adapted to fit upon the annular tongue *b'* on said diaphragm. The said annular groove contains a ring, *c'*, of elastic
50 packing. The removable seat C constitutes a separate invention, and its construction and

the mode of forming the joint between it and the diaphragm of a valve-casing is fully set forth and described in the Letters Patent No. 272,634 of the United States, that were granted 55 to me on the 20th day of February, 1883, for the said invention.

D is a clack-valve adapted to close and form a tight joint over the opening *c* in the valve-seat. Said valve is provided with a radial 60 arm, *d*, which has the trunnions *d'* projecting from each edge, for the purpose of affording the required pivotal centers for the valve D to swing upon.

E is a removable sleeve fitted into the bore 65 of the chamber *a*, so as to bear against the upper face of the valve-seat C and retain the latter in its place. The said sleeve is provided with an opening, *e*, through one of its sides, for the purpose of permitting liquids to pass there- 70 through, and at its opposite side a smaller opening, *e'*, is made for admitting the arm *d* of the valve. As illustrated in Fig. 3, the sleeve E and its opening *e'* combine with the recess *a'* in the inclined chamber of the casing 75 A to form a pocket for receiving the trunnions *d'* in such manner that the valve D will be retained in its true position. The screw cap or bonnet F for the inclined chamber *a* is adapted to bear against the upper end of the 80 sleeve E, so as to force the valve-seat C against the packing *c'* with sufficient pressure to maintain a tight joint between said valve-seat and the diaphragm B; but it will be seen by referring to Figs. 2 and 3 of the drawings that 85 ample clearance is given to the parts to permit the valve D to vibrate with perfect freedom.

I preferably construct these valves in such manner that the several parts of any one size will be perfectly interchangeable, and assembling of the component parts into an operative 90 device is effected in the following manner: The removable seat C, containing an elastic packing, *c'*, is first fixed in position on the annular tongue *b* of the partition B. The valve 95 D is then inserted in the inclined chamber *a*, so that the trunnions *d'* of said valve will properly enter and lie in the transverse recess *a'*. The sleeve E is then slipped into the inclined chamber *a* in such manner that its opening *e'* 100 will span over the arm *d* of the valve, and the trunnions *d'* will be so held in the recess *a'* by

said sleeve that the valve D will have ample room to vibrate freely, but cannot be displaced from its true position while the remainder of the parts are maintained in their places. The assembling of the parts is completed by screwing the cap F into the outer end of the inclined chamber *a*, so that the under side of said cap will press against the upper end of the sleeve E with sufficient force to cause the latter to hold the seat C securely to its place.

Access to the interior of the device is easily obtained, so that any of its inner parts can be removed, for the purpose of repairing or renewing, without taking the casing A from its place in a line of pipes.

I claim as my invention—

1. The valve-casing A, provided with a partition, B, arranged in an inclined position to the center line of said casing, and having an annular tongue, *b'*, formed thereon, as herein set forth, the said casing having a cylindrical chamber, *a*, arranged perpendicularly to the

face of the partition B, concentrically to the annular tongue *b'*, and containing the transverse recess *a'*, as herein described, in combination with a removable seat, C, adapted to fit upon the annular tongue *b'*, a removable sleeve, E, provided with the opening *e'*, and a clack-valve, D, provided with trunnions *d'*, that are adapted to engage in the recess *a'*, as and for the purpose herein specified.

2. The combination, with a valve-casing, A, provided with the chamber *a*, containing a transverse recess, *a'*, as herein described, of the clack-valve D, provided with trunnions *d'*, and the removable sleeve E, provided with the opening *e'*, and adapted to retain the trunnions *d'* in the recess *a'*, in the manner and for the purpose herein specified.

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