

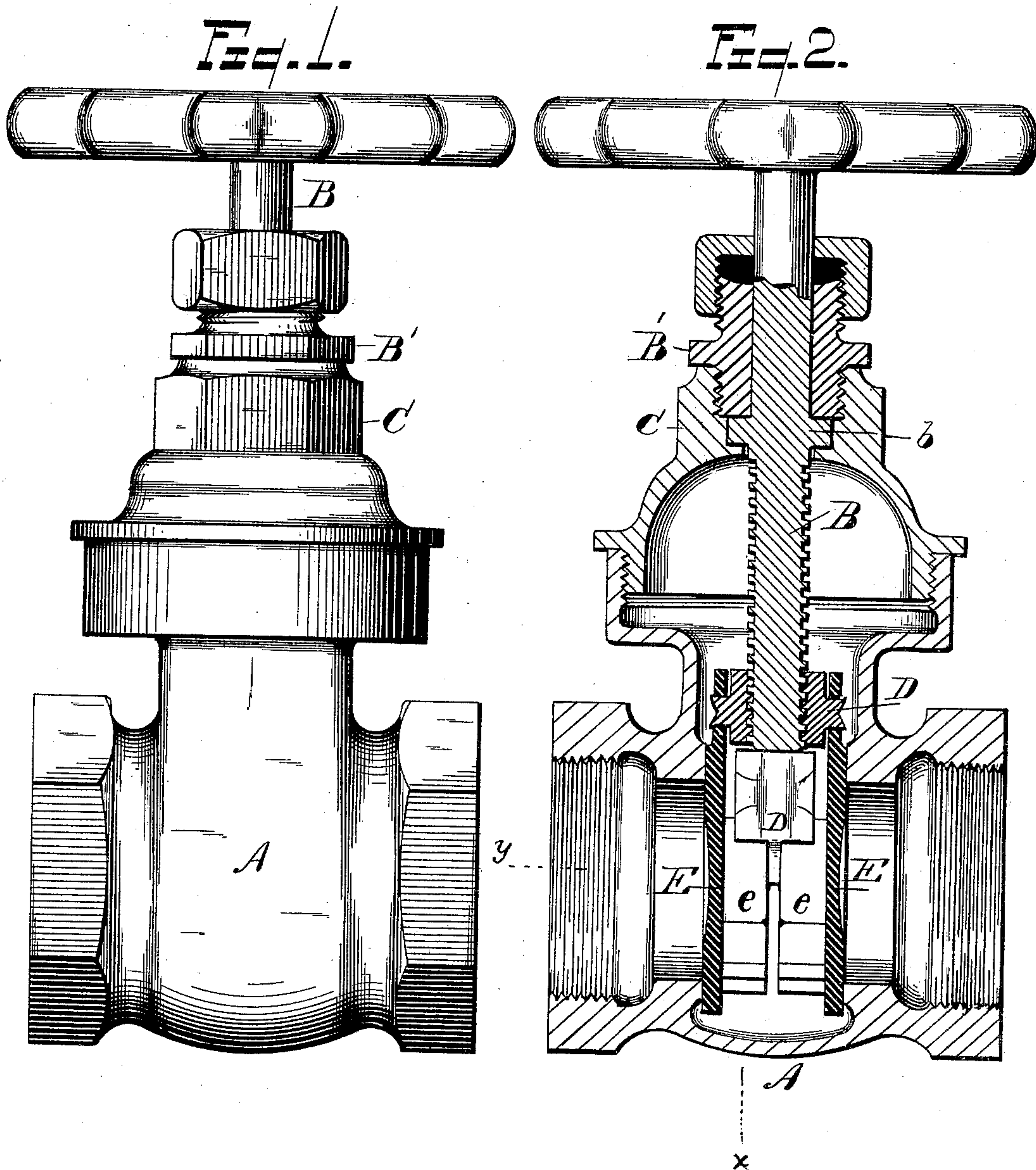
(No Model.)

3 Sheets—Sheet 1.

J. GALVIN.  
VALVE.

No. 411,283.

Patented Sept. 17, 1889.



WITNESSES

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Jos. L. Harrington

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(No Model.)

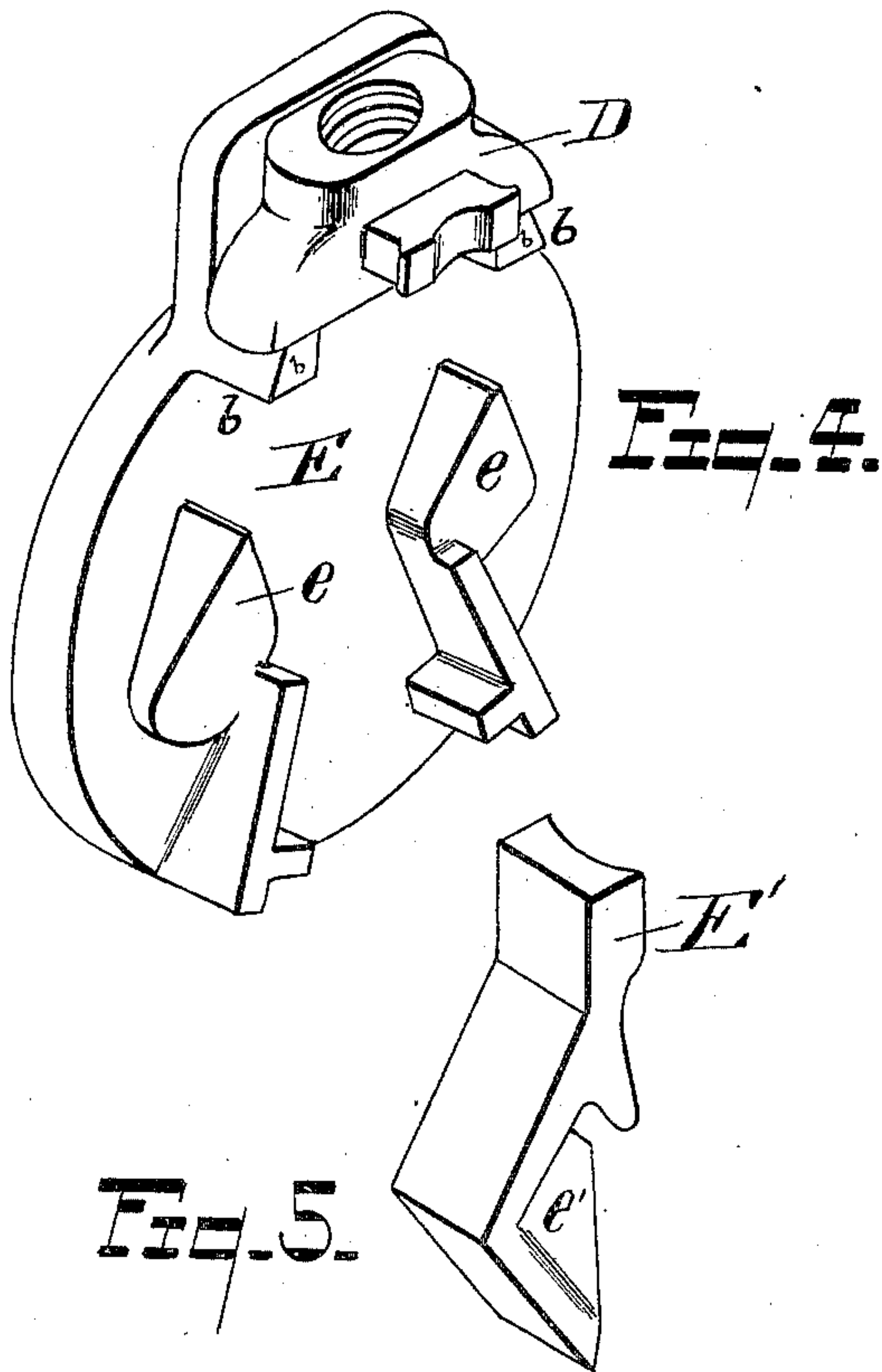
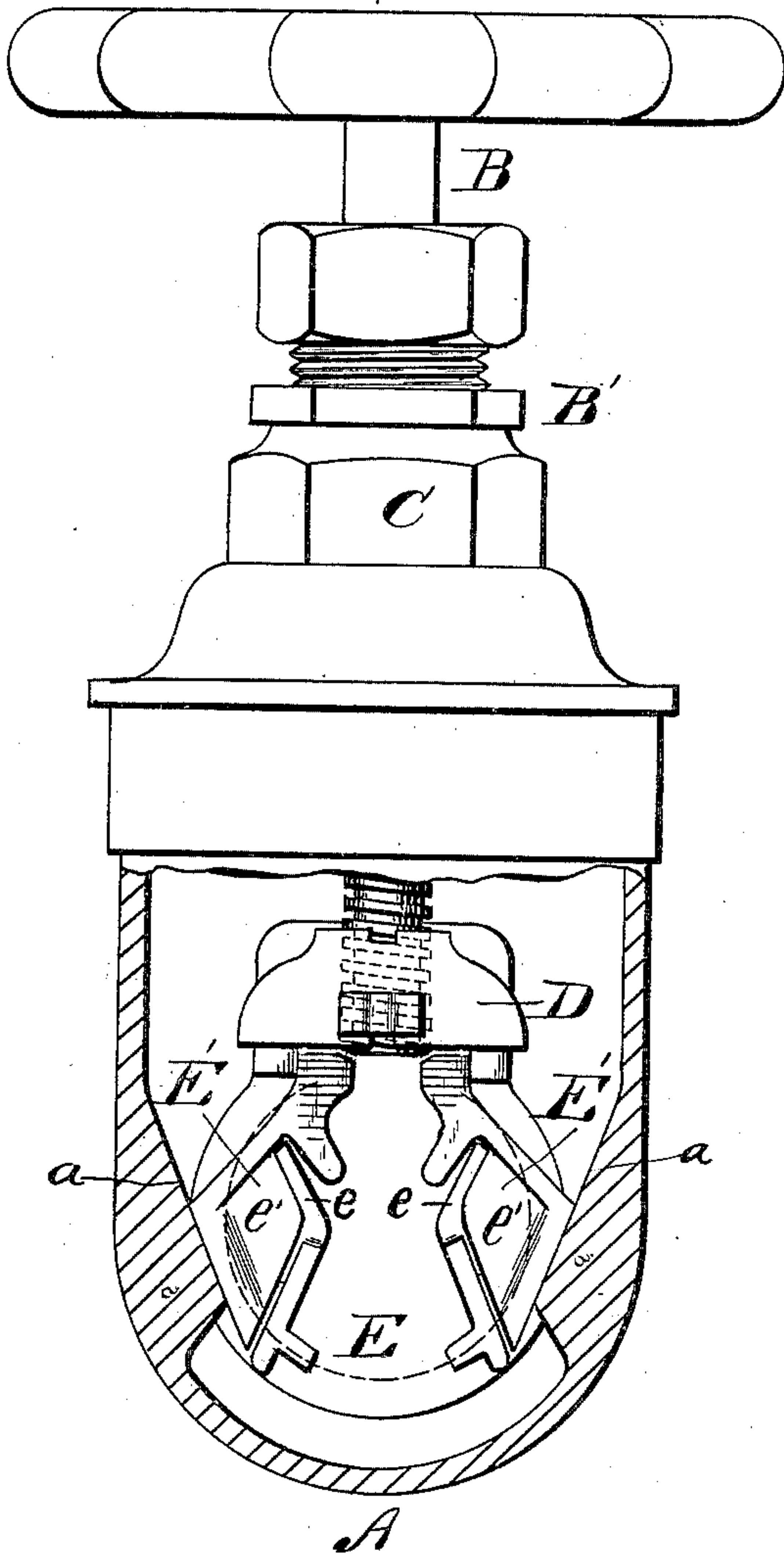
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Fig. 3.



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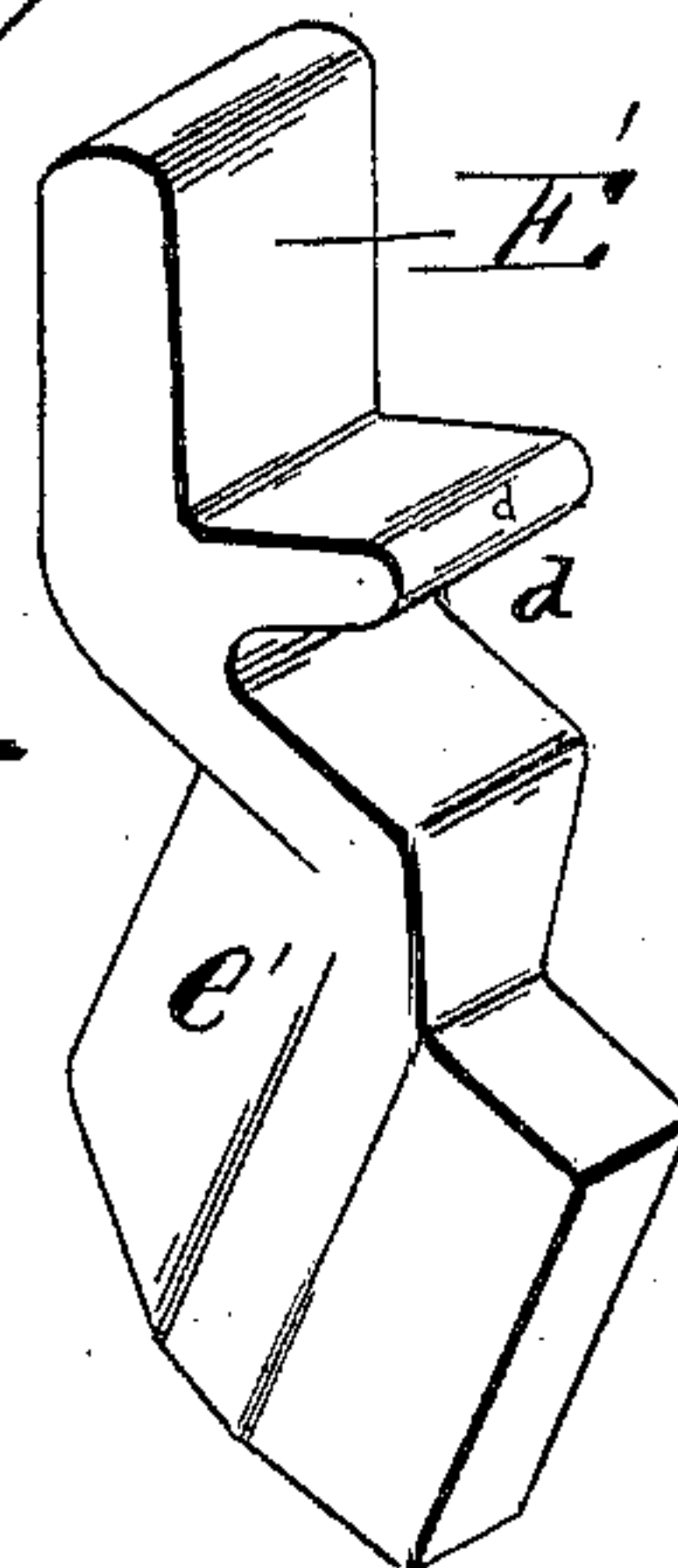
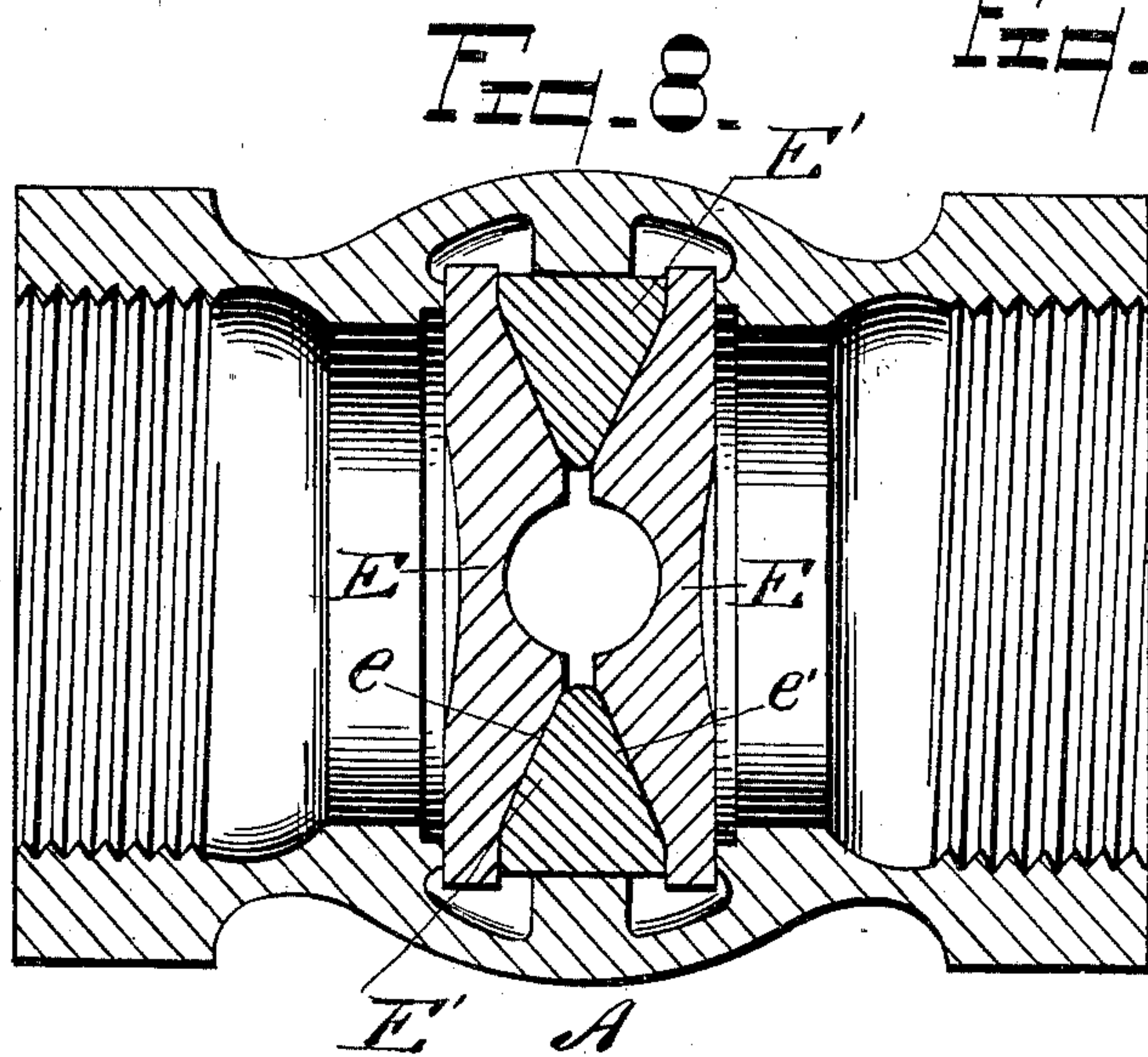
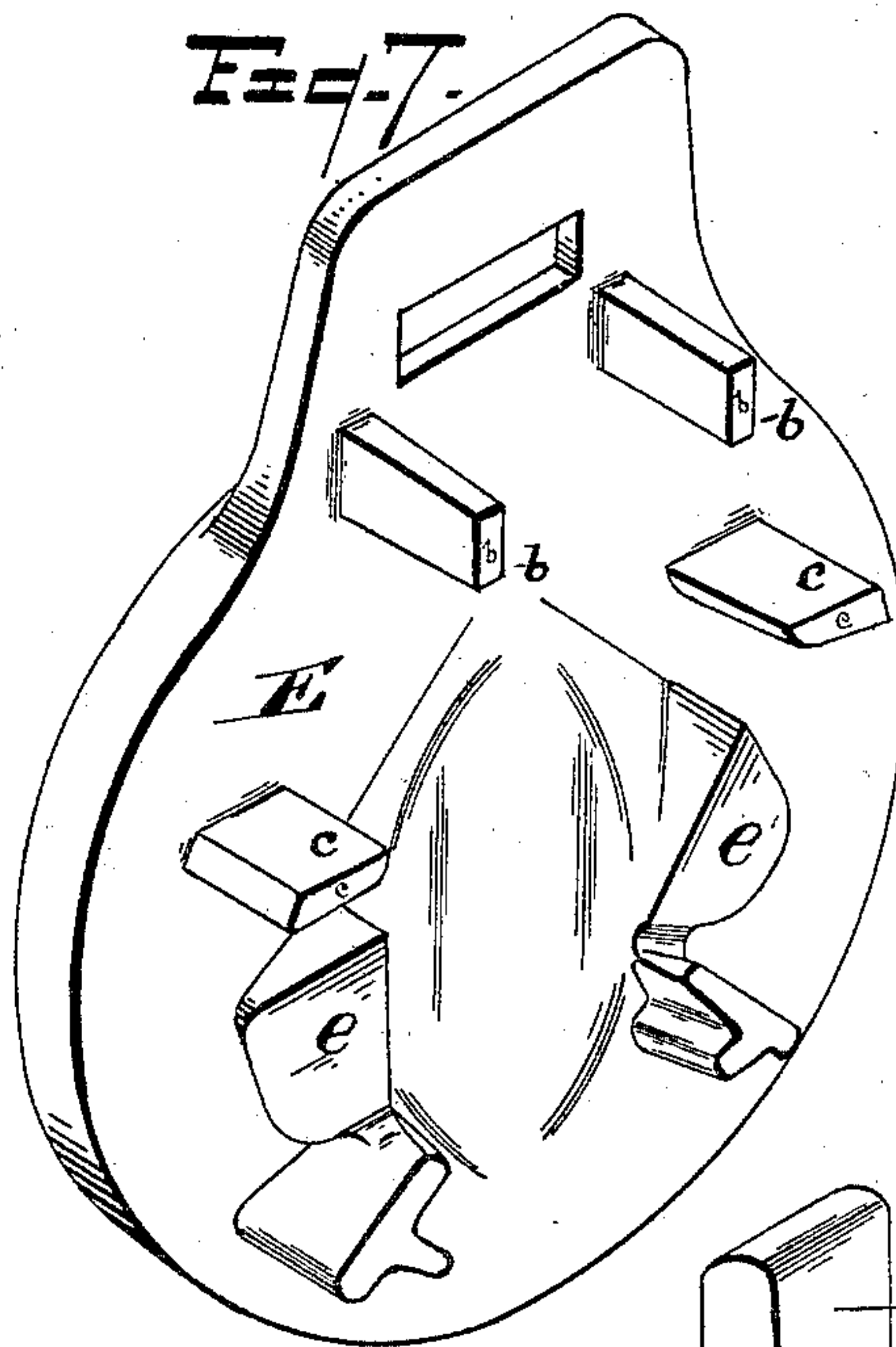
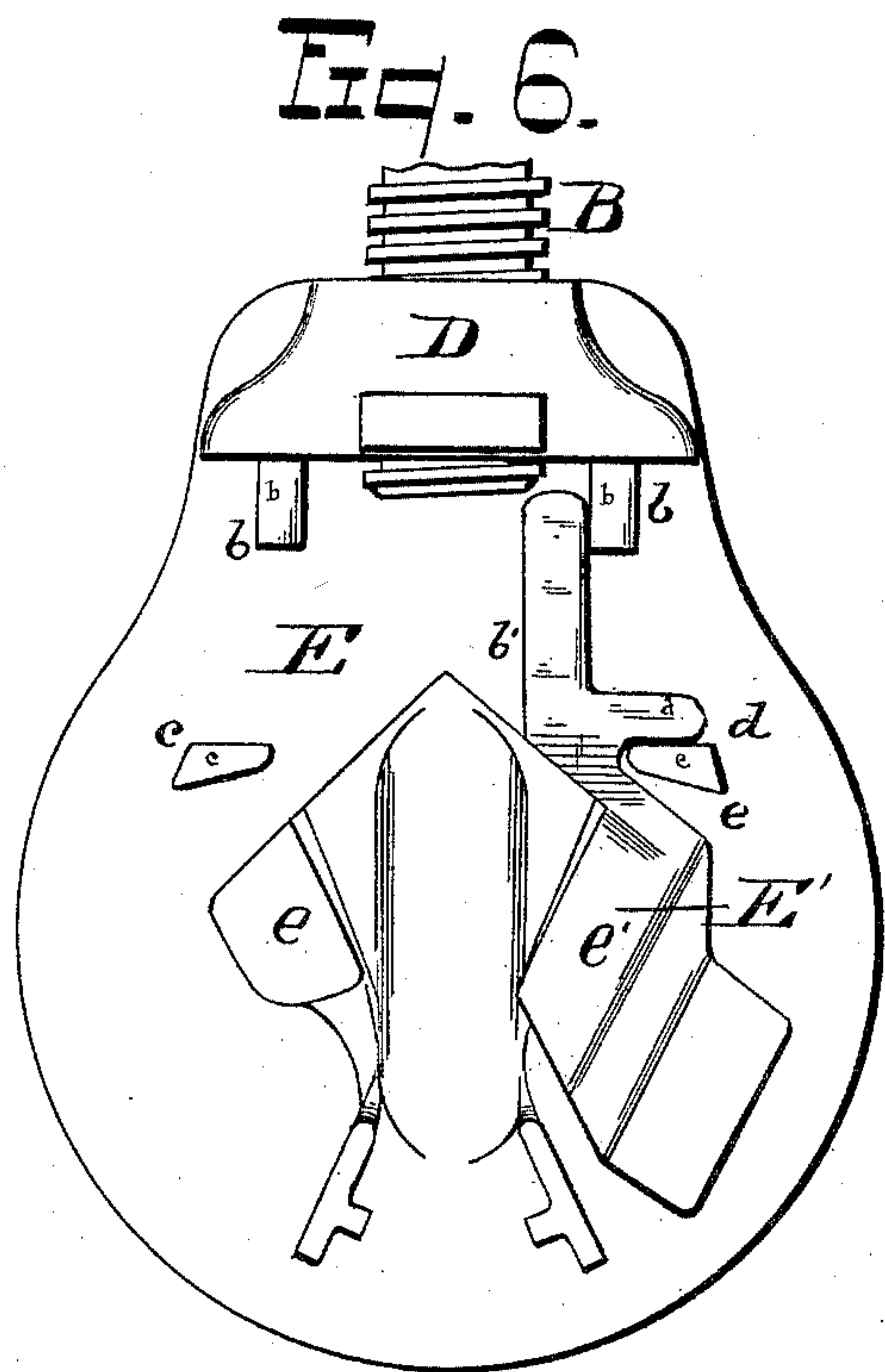
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3 Sheets—Sheet 3.

J. GALVIN.  
VALVE.

No. 411,283.

Patented Sept. 17, 1889.



WITNESSES

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# UNITED STATES PATENT OFFICE.

JAMES GALVIN, OF DETROIT, MICHIGAN.

## VALVE.

SPECIFICATION forming part of Letters Patent No. 411,283, dated September 17, 1889.

Application filed March 6, 1889. Serial No. 302,106. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES GALVIN, a citizen of the United States, residing at Detroit, Wayne county, Michigan, have invented certain new and useful Improvements in Valves; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, and which form a part of this specification.

My invention relates to certain novel improvements in that class of valves known as "sliding-gate valves," wherein two vertically-movable gates are caused by lateral movements to simultaneously close against annular seats during the act of shutting the valve and to simultaneously leave their seats and rise vertically during the act of opening the valve, which improvements will be fully understood from the following description and claims, taken in connection with the annexed drawings, in which—

Figure 1 is an external view of my improved gate-valve. Fig. 2 is a diametrical section taken longitudinally through the same. Fig. 3 is a vertical section taken transversely through the lower part of the valve box or case in the plane indicated by dotted line *x* on Fig. 2, showing the positions of these several parts of a gate when the same is shut, the wedges *E' E'* bearing against the inclined planes on the inner wall of the said box or case. Fig. 4 is a perspective view of one of the gates or valves *E*, its lugs, and screw-tapped nut. Fig. 5 is a perspective view of one of the wedges *E'*, with its laterally-beveled surface *e'*. Fig. 6 is an inside face view of Fig. 7. Fig. 7 is a perspective view of Fig. 6, and wedge *E* detached. Fig. 8 is a diametrical section through the valve, taken in the plane indicated by dotted line *y* on Fig. 2; and Fig. 9 is a perspective view of one of the wedges *E'*, showing clearly its lugs or offsets *d* and *b'*.

Similar letters of reference indicate corresponding parts in the several figures.

The external parts of my valve are substantially the same as those in common use

and in the accompanying drawings. A represents the shell or casing of the valve, of usual form, provided with a movable cap *C* and screw-stem *B* for raising or lowering the gates or disks, with the usual packing-box applied to the cap encircling the screw-stem to prevent leakage.

The shell or casing of my valve is provided on the inner surface with incline stops *a a* on either side for the purpose of stopping and supporting the adjustable wedges *E' E'* when the valve is forced to its seat.

*D* indicates a threaded nut, through which the screw-stem *B* passes, which is held firmly in position by the usual stem-collar. Upon either side of the nut *D* are attached disks *E E*, which are provided at the top with eyes and hang upon lugs projecting from the sides of the nut *D*, which lugs are enlarged on their outer ends after the disks are placed thereon, the disks being loosely hung and held in position. Immediately below the nut *D* and on the inner surface of each disk are projecting lugs *b b*, upon which the nut *D* rests and presses against when the valve is forced to its seat. The same lugs hold and keep the wedges *E' E'* in line with the stem and prevents them from moving from their proper positions. Immediately below the projecting lugs *b b*, I also use, when desired, bearings *c c*, upon which rests the lip *d* of the wedge, as illustrated in Fig. 6 of the drawings. These bearings and lips are not indispensable elements in my invention, but may be used to sustain and firmly hold the wedges in proper position. The lower projections *e e* are for the purpose of keeping the disks parallel at all times, and also preventing the wedges from approaching each other at the lower ends, or being forced together when brought in contact with the incline stops.

It will be seen that the construction of the wedges above described and the bearings against which they impinge is such that by the act of turning the valve-stem when the gates are fully depressed these gates are instantly forced to their seats or released therefrom.

The adjustable wedges *E' E'* always hang on the projecting lugs or inclines on the inner surface of the disks, and when brought



in contact the wedges are forced in two directions, both lengthwise and crosswise by the movement of the screw, and when the valve descends the wedges adjust themselves  
 5 and remain free until the disks cover the openings, after which they are brought in contact with the stops, and the disks are at once forced up and against their seats. The wedges may be made to hook or hang upon  
 10 the projections on the surface of the disks in either of two different ways, as shown.

It will be seen that when the valve is placed with the handle uppermost the wedges hang upon the incline projections *e e*, and when  
 15 the valve is laid on its side the wedges are prevented from falling by the lugs *b b* and *c c*, that are on the inner face of the disks immediately under the nut D.

The projections *e e* are so constructed as  
 20 to hold the wedges *E' E'* in position and at the same time permit an upward and lateral movement thereof.

One important feature is the fact that the wedges, being hung on the disks centrally, are  
 25 equally balanced, thus avoiding the danger of their tipping over to one side.

It will be seen from the above description that when the gates are shut, as shown in Fig. 2, the slightest rotation backward of the  
 30 valve-stem will instantly release these gates from their seats, by reason of the laterally-beveled edges of the wedges *E'* leaving their bearings, then by a continuation of the rotation of the valve-stem in the same direction  
 35 the gates can be both fully lifted, so as to

leave a clear passage through the body of the valve-case for the passage of a fluid. A simple reversal of the rotation of the valve-stem will depress the gates and then forcibly press them to their seats, the parts assuming the  
 40 positions, when closed, as shown in Figs. 2 and 8.

Having thus described my invention, I claim—

1. In a valve of the character described, 45 the combination, with the casing A, of the two gates E, having internally-beveled surfaces provided with inclined lugs *e e*, lugs *c c* and *b b*, arranged as specified, and the wedges *E' E'*, having inclined surfaces *e' e'*, lugs *b'* 50 and *d*, the inclined planes *a a* on the case A, the threaded nut D, engaging with said gates, and the operating-screw B, all as specified.

2. The combination, with the valve-casing constructed with inclined bearings *a a*, and 55 provided with a cap, a screw-stem, and annular valve-seats, of two vertically and laterally movable gates E E, having inclined lugs *e e*, horizontal lugs *c c* above the latter, and lugs *b b* in a plane above the lugs *c c*, the wedges 60 *E' E'*, having inclined surfaces, the supporting-lip *d'*, and lug *b*, and the nut D, engaging with the upper part of the said gates, all as specified.

In testimony whereof I affix my signature 65 in presence of two witnesses.

JAMES GALVIN.

Witnesses:

FRANK D. ANDRUS,  
 JOS. L. HARRINGTON.