

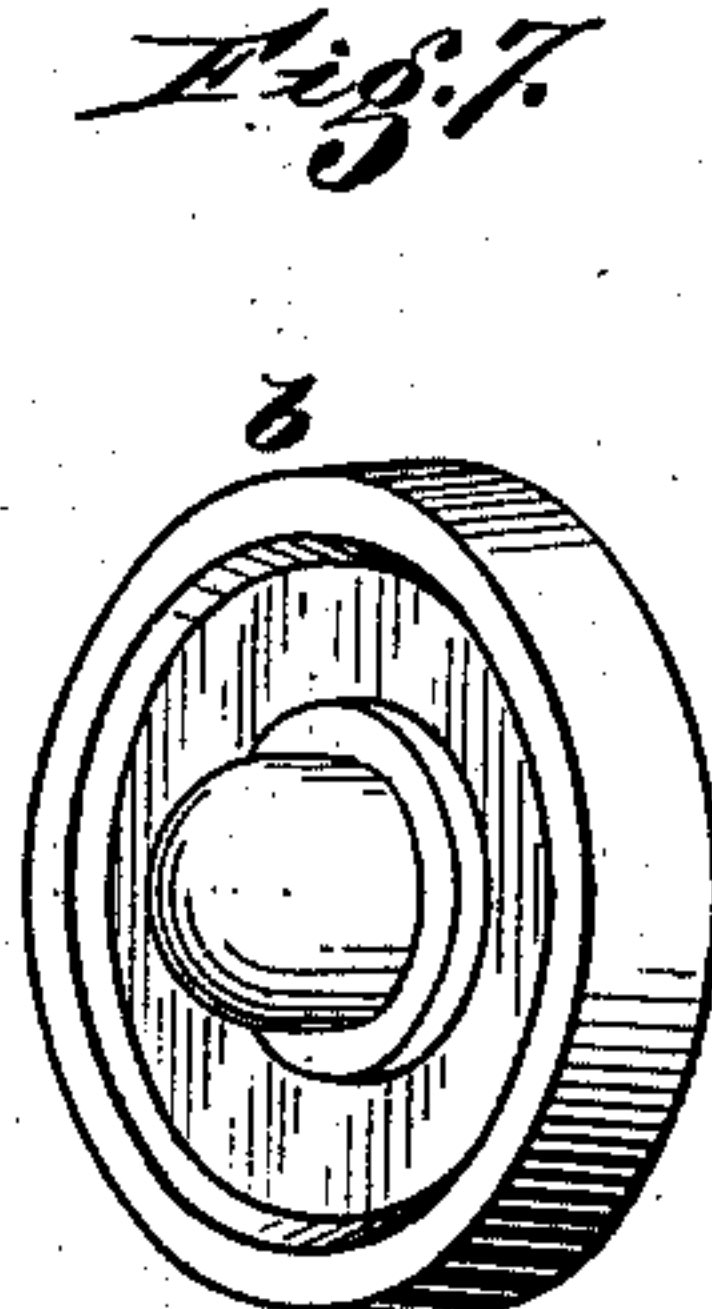
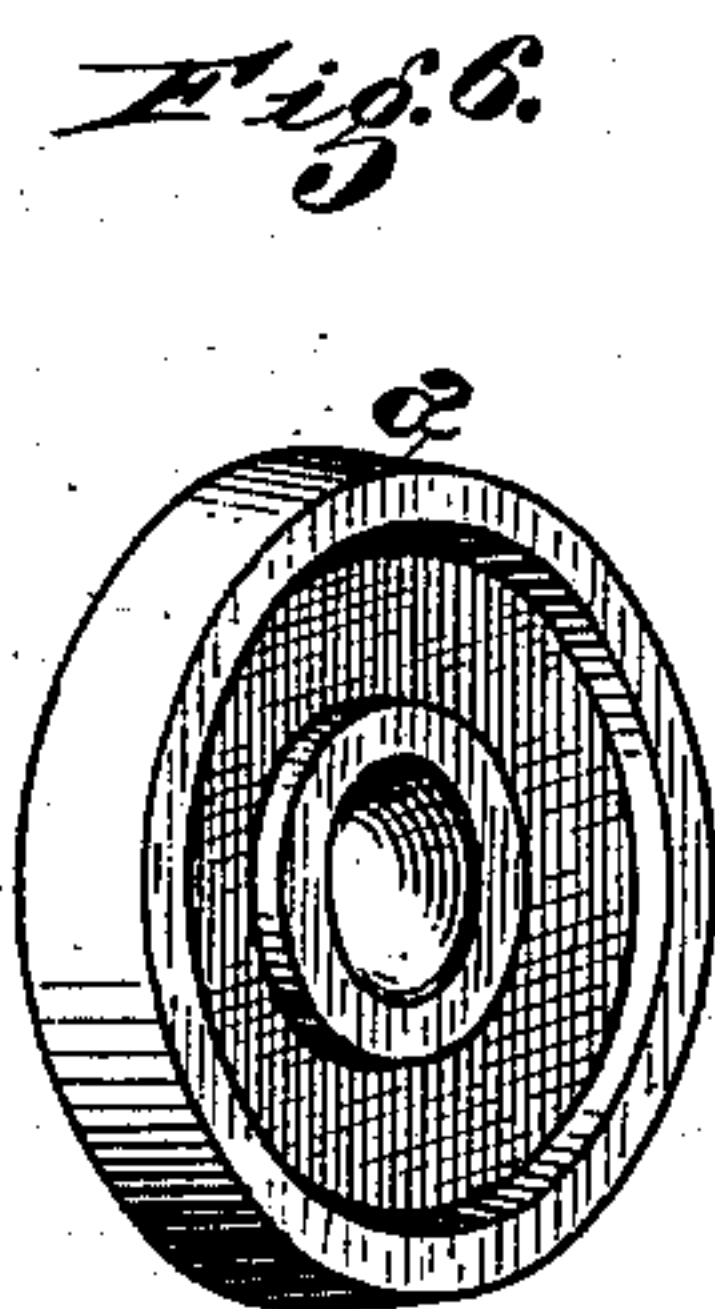
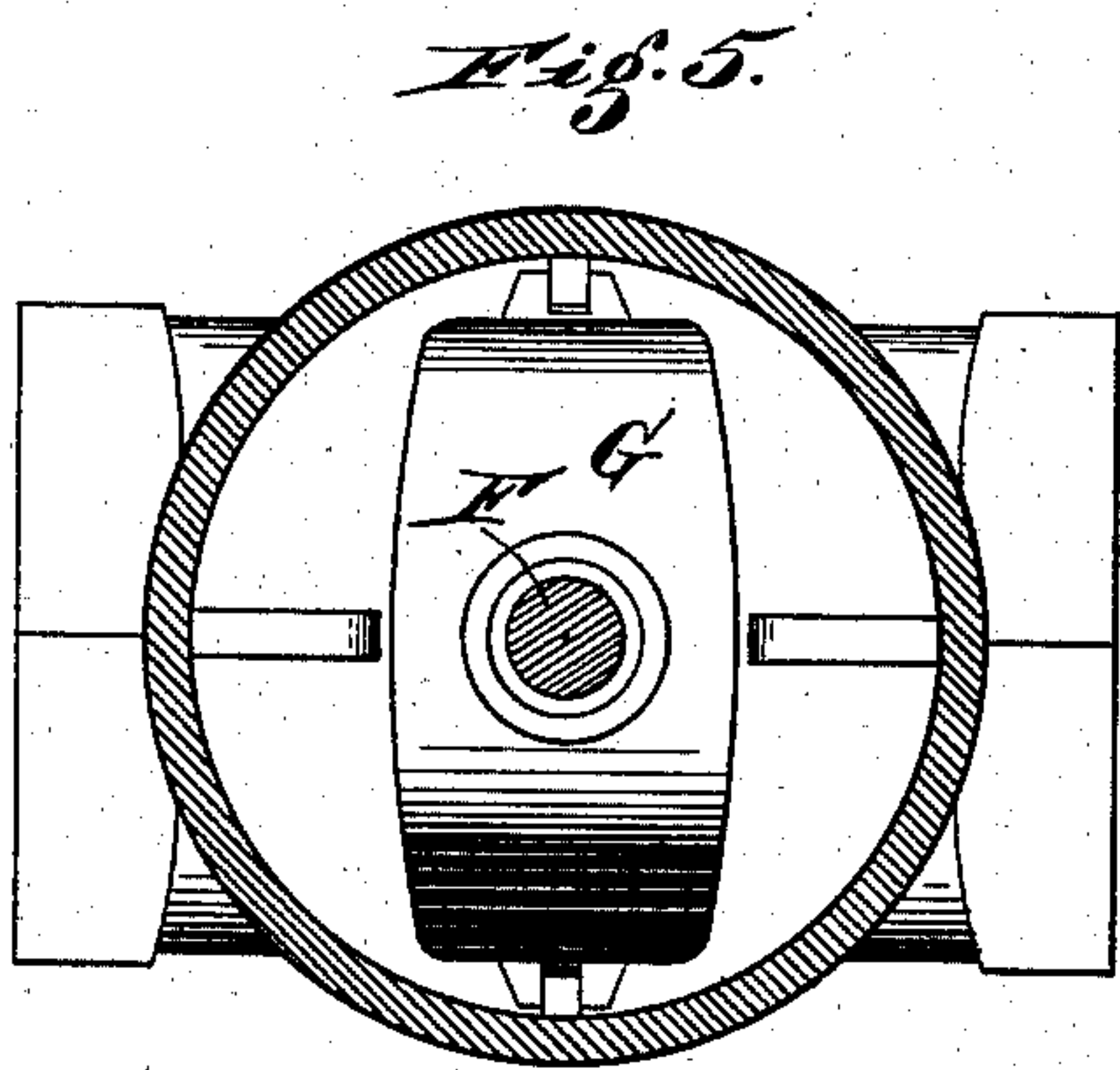
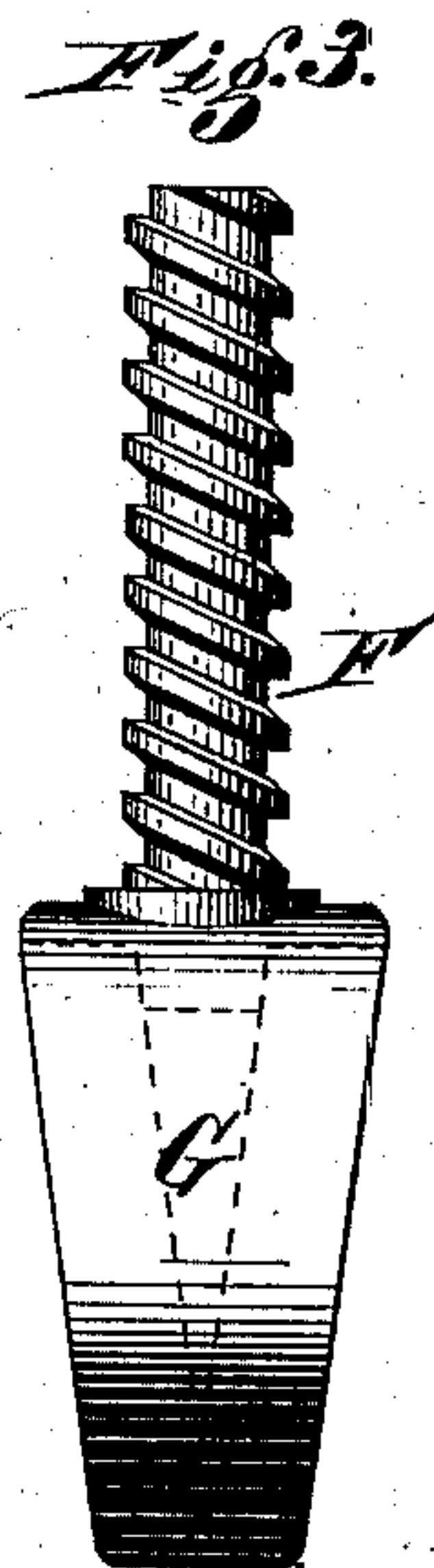
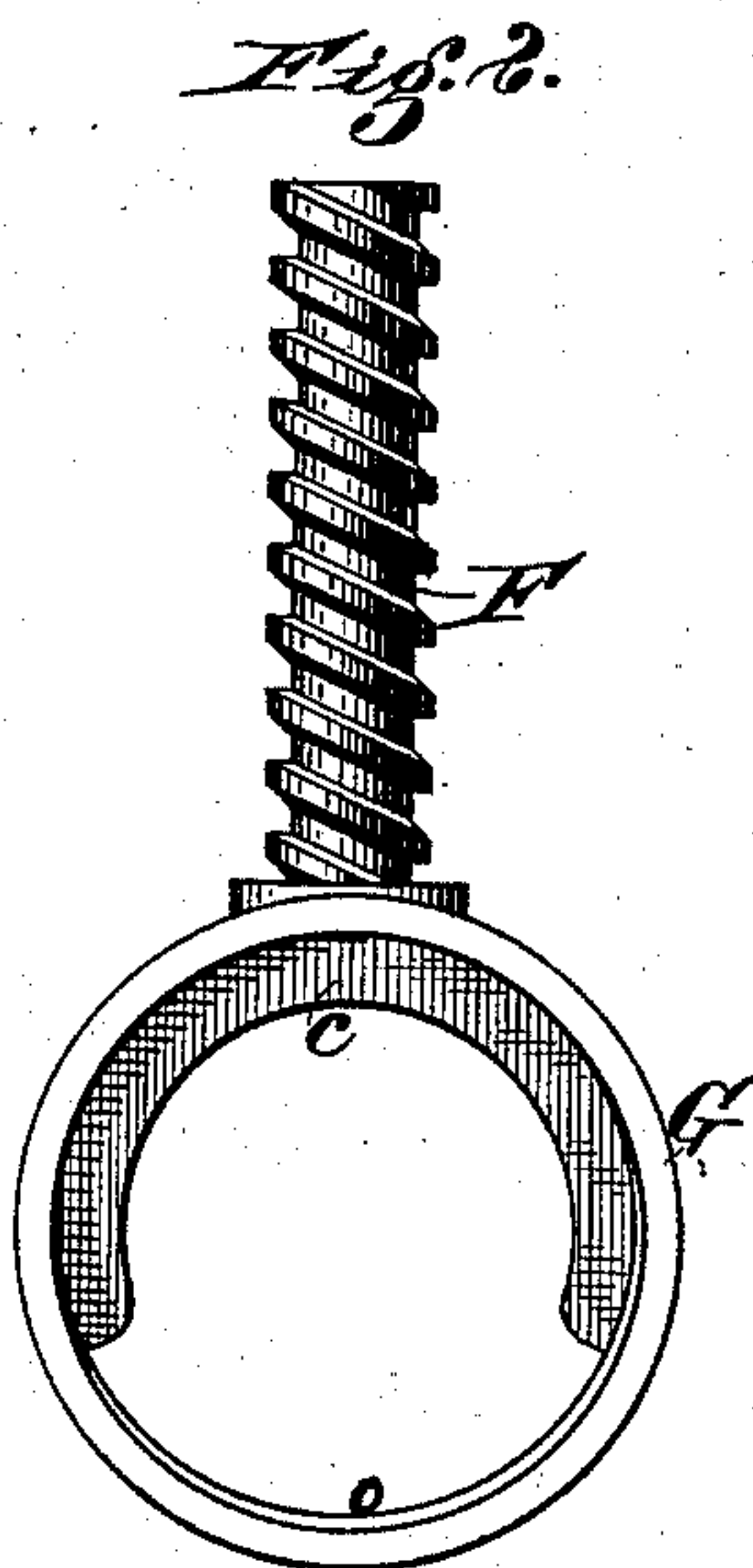
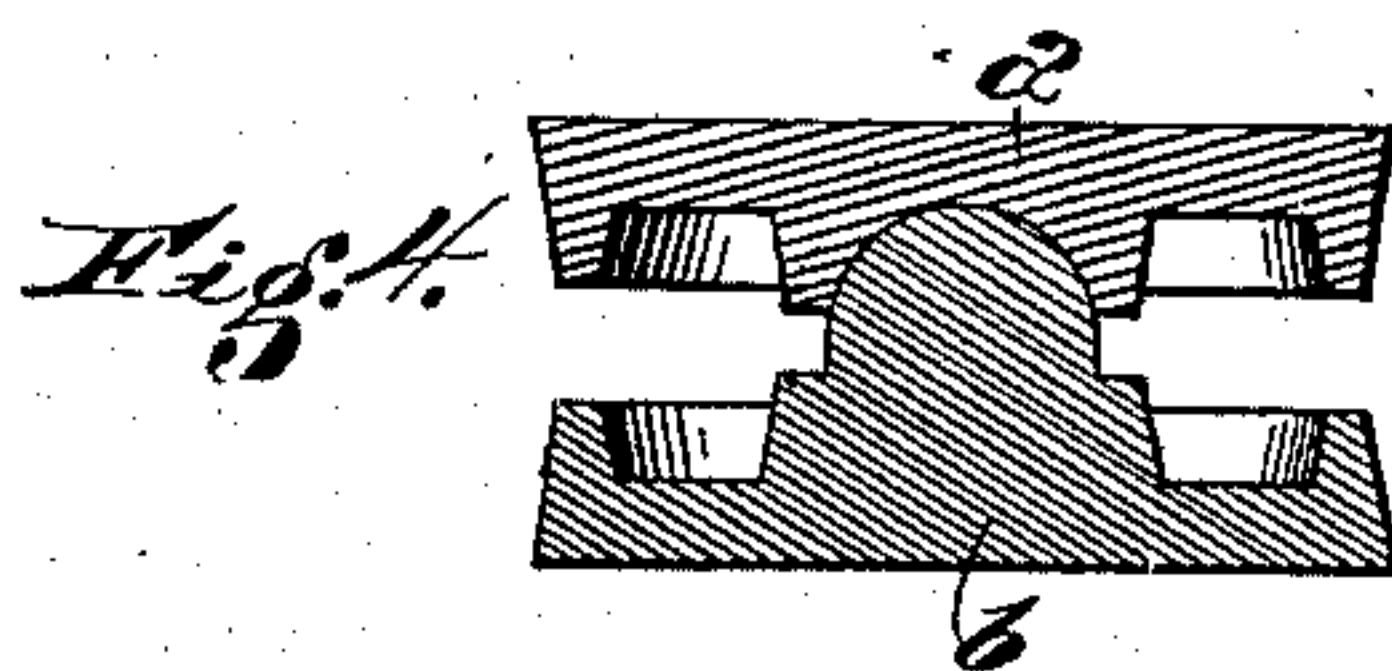
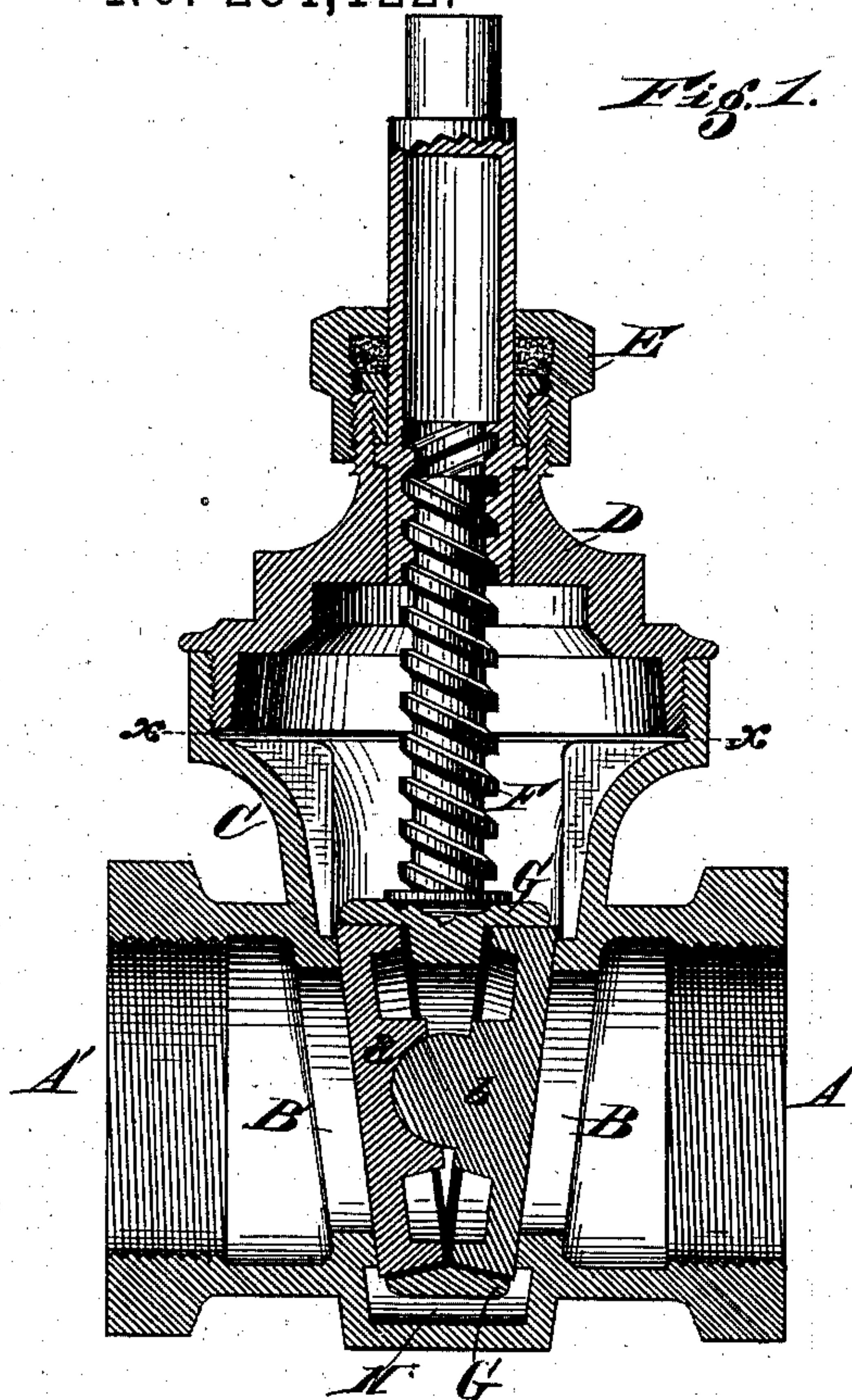
(No Model.)

2 Sheets—Sheet 1

S. B. DOVER.  
STRAIGHT WAY VALVE.

No. 284,122.

Patented Aug. 28, 1883.



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Jno. E. Wiles.  
A. G. Luchowsky.

Inventor  
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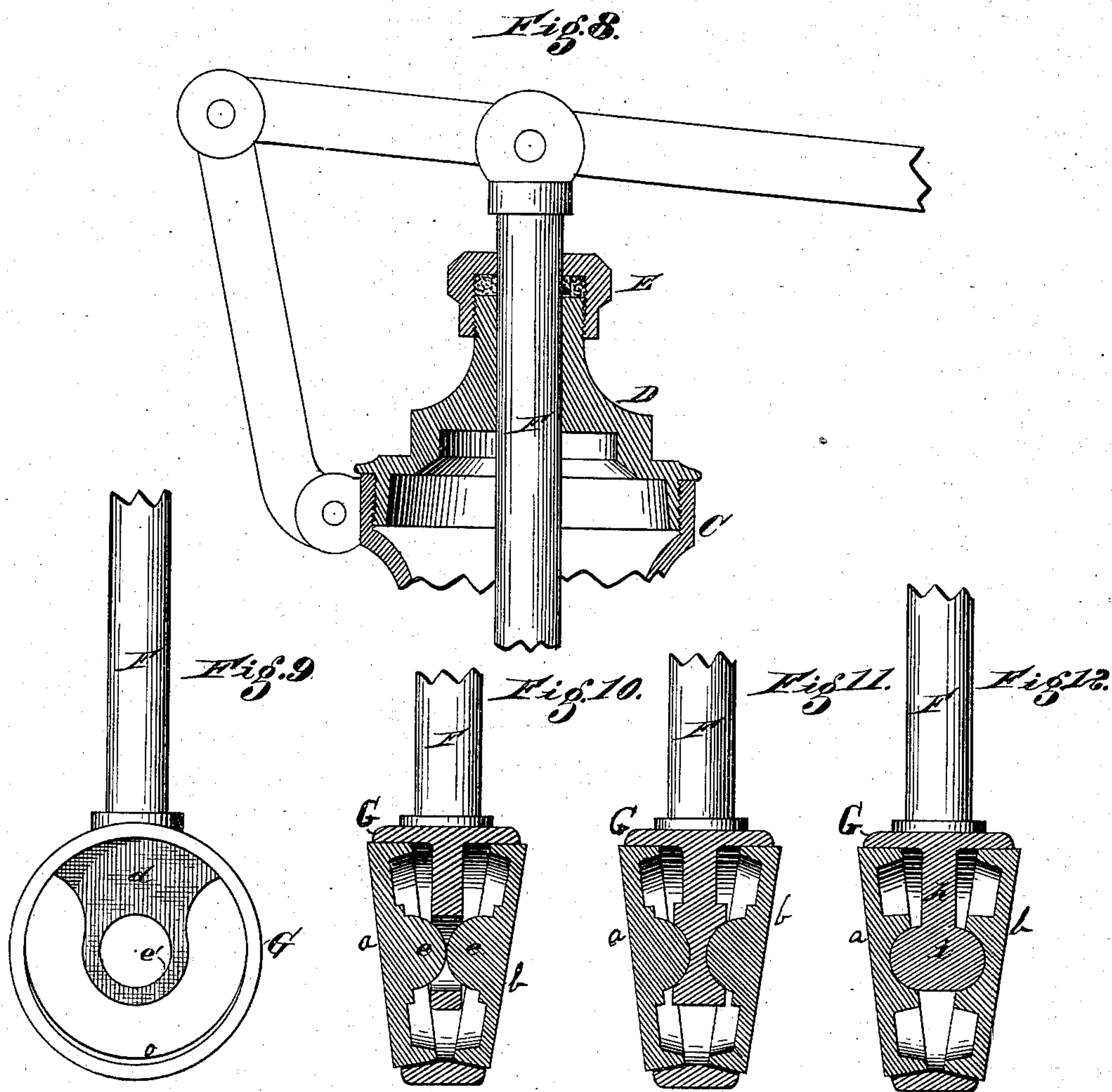
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# UNITED STATES PATENT OFFICE.

SAMUEL B. DOVER, OF DAYTON, OHIO.

## STRAIGHT-WAY VALVE.

SPECIFICATION forming part of Letters Patent No. 284,122, dated August 28, 1883.

Application filed February 13, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL B. DOVER, a citizen of the United States, and a resident of Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Straight-Way Valves, of which the following is a specification.

My invention relates to straight-way valves.

The object of my invention is to provide a double wedging-valve, the disks of which will automatically seat against the faces of the water-way by working on universal joints, which allow the valve-disks to rotate on their centers in opening and closing, so that the faces will wear uniformly, thereby preserving tight joints, the same being more durable than non-rotating.

Another object of my invention is to cheapen the cost of the valve by so constructing it that the faces of the disks and seats alone will require fitting.

Other features of my invention will be fully set forth in the description of the accompanying drawings.

Figure 1 is a central vertical section of my improved valve. Fig. 2 is a face elevation of valve-disk boxing. Fig. 3 is a side elevation of the part shown in Fig. 2. Fig. 4 is a central cross-section of the preferred form of valve-disks. Fig. 5 is a sectional plan on line *x x*, Fig. 1. Figs. 6 and 7 are inner face views of the valve shown in section in Fig. 4. Fig. 8 is a modified form of operating the valve-disk boxing and disks. Figs. 9 and 10 show modifications of my valve disks and seats. Figs. 11 and 12 are other modifications of the same parts.

A A represent the barrel of an ordinary straight-way valve; B B', the valve-chamber, the inner faces of which form annular seats for plain valve-disks. C, D, and E represent the ordinary valve-stem, housing, cap, and stuffing-box. These parts are all of the usual form of construction.

F represents my improved valve-stem.

G is a cylindrical valve-disk shell suitably connected to stem F, as shown in Figs. 2 and 3. The inner periphery of shell G forms the cylindrical support, and serves as seats or bearings for the partial rotary movement for valve-disks *a* and *b*, which rest loosely therein.

*o* represents a semicircular flange made near the center of the inner periphery of shell G, which serves to strengthen the shell, and holds the disks *a b* in an inclined position.

The preferred form of constructing the valve-disks and valve-seats, as shown in Figs. 2, 3, 4, 5, 6, and 7, is to provide a ball upon the inner face of one valve, seating in a corresponding-shaped socket in the opposite valve-disk, which serves as a center for the valve-disks to rotate each upon the other, and also to serve as a universal joint for the valve-disks to adjust themselves laterally upon each other, so that each valve-disk will be retained in a plane parallel with and subsequently against the inclined seat, against which it is thrust by the shell G to hold the valve-disks closed and to form tight joints. The ring or shell G holds the valve-disks *a b* in correct planes, and the centering of one upon the other allows a rotary motion of the disks, which causes the faces to wear evenly, and the rocking motion allows them to adjust the planes parallel to their seats. This form of construction is very important, as the only finish required is to face off the valve and the seats.

Figs. 1, 2, and 3 show the valve-stem as operated by screw-threads. It may be operated by a lever, as shown in Fig. 8. Instead of having a ball-and-socket joint on the inner face of the disks *a b*, as shown in Figs. 1, 4, 5, and 6, the ring or shell G could be provided with a diaphragm, *d*, and each valve provided with a ball seating in a socket, *e*, as shown in Figs. 10 and 11, which would serve as a universal center and perform the same functions as the preferred form of construction. So, also, the ball for the centers might be made on the partition *h*, and the sockets made in the face of the valves in which the ball would center, as shown in Fig. 12.

Fig. 11 shows a slightly-modified form of Figs. 9 and 10. Other modifications might be made and still attain the principal effects of my invention.

Shell G is made a complete cylinder for strength. A segment greater than a half-circle would perform the same functions of holding the disks, but would not be as strong and durable.

I claim—



1. In a straight-way valve, in combination with the stem F and shell G, the valves *a b*, loosely supported by the inner periphery of shell G in an inclined or wedging position for  
5 seating against the seats of chamber B B', substantially as herein set forth.

2. In a straight-way valve, a cylindrical wedge-shaped valve-support provided with annular disk valve-seats on the interior peripheries of the shell, in combination with  
10 valves *a b*, loosely supported therein, substantially as specified.

3. In a straight-way valve, the combination,

with the stem F and cylindrical shell G, of the valves *a b*, loosely supported by the inner periphery of shell G, and provided with ball-and-socket centers on which the valves can rotate  
15 and adjust themselves to the seats in the valve-chamber B B', substantially as herein set forth.

In testimony whereof I have hereunto set  
20 my hand in the presence of two subscribing witnesses.

SAML. B. DOVER.

Witnesses:

JNO. E. JONES,  
A. GLUCHOWSKY.