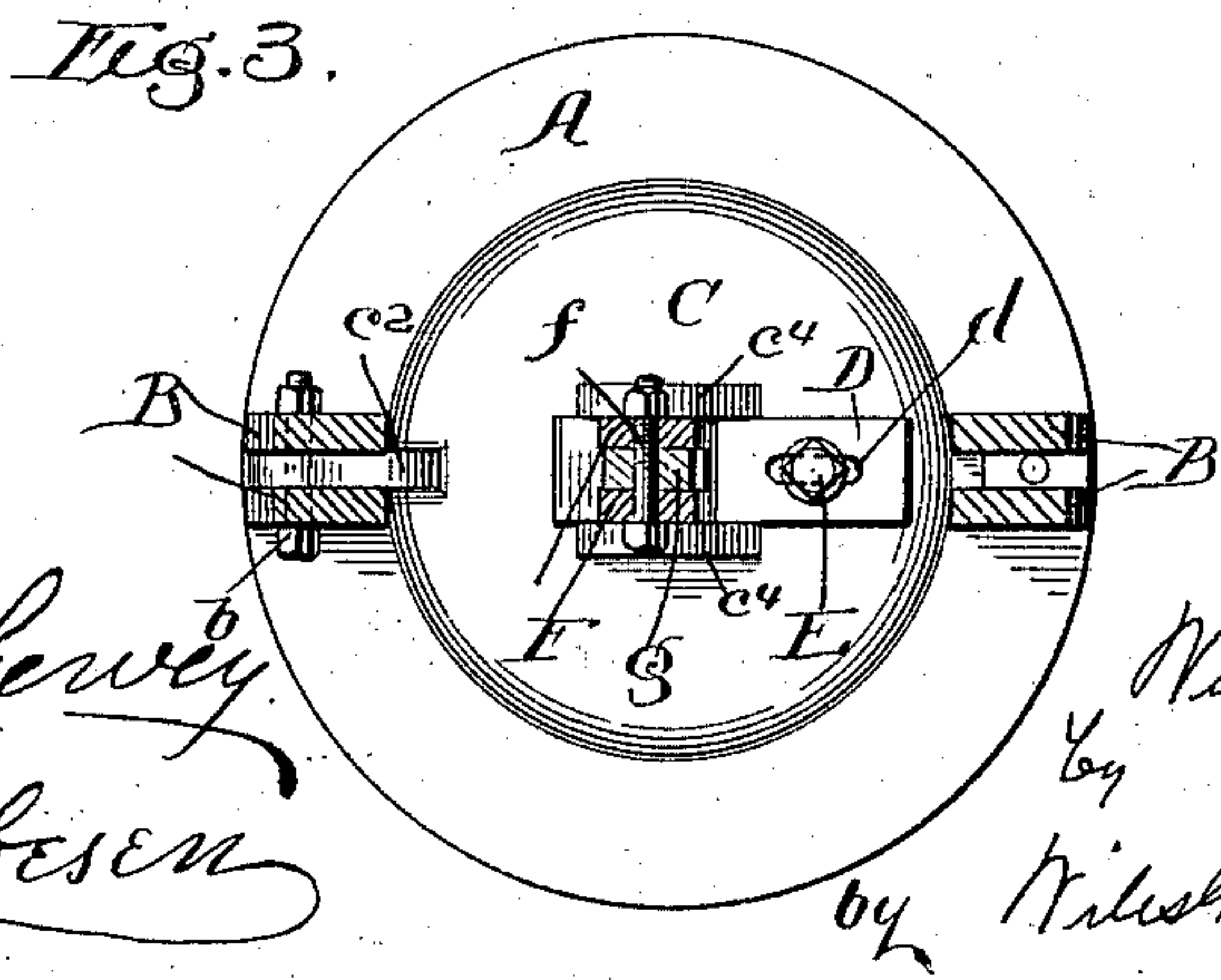
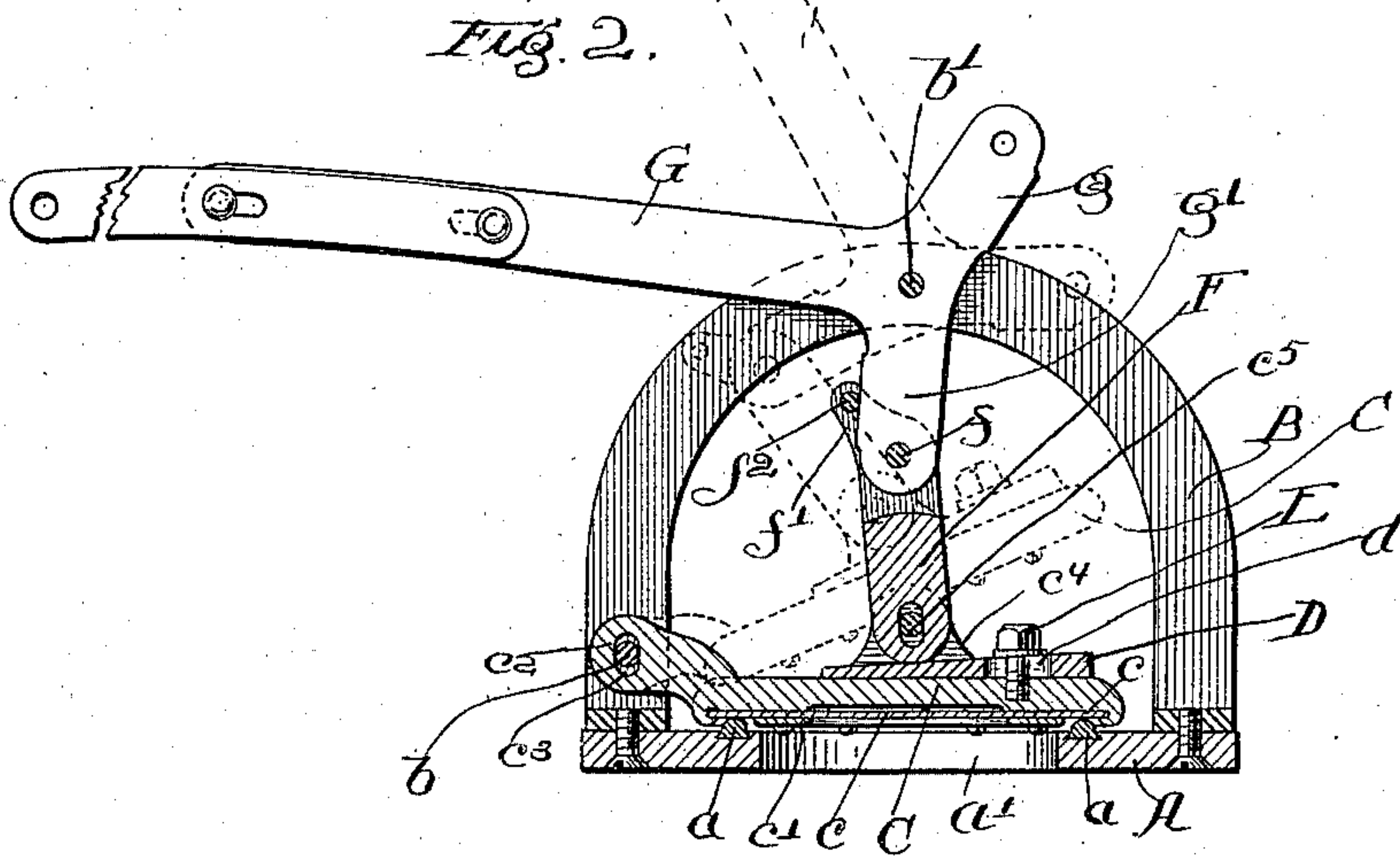
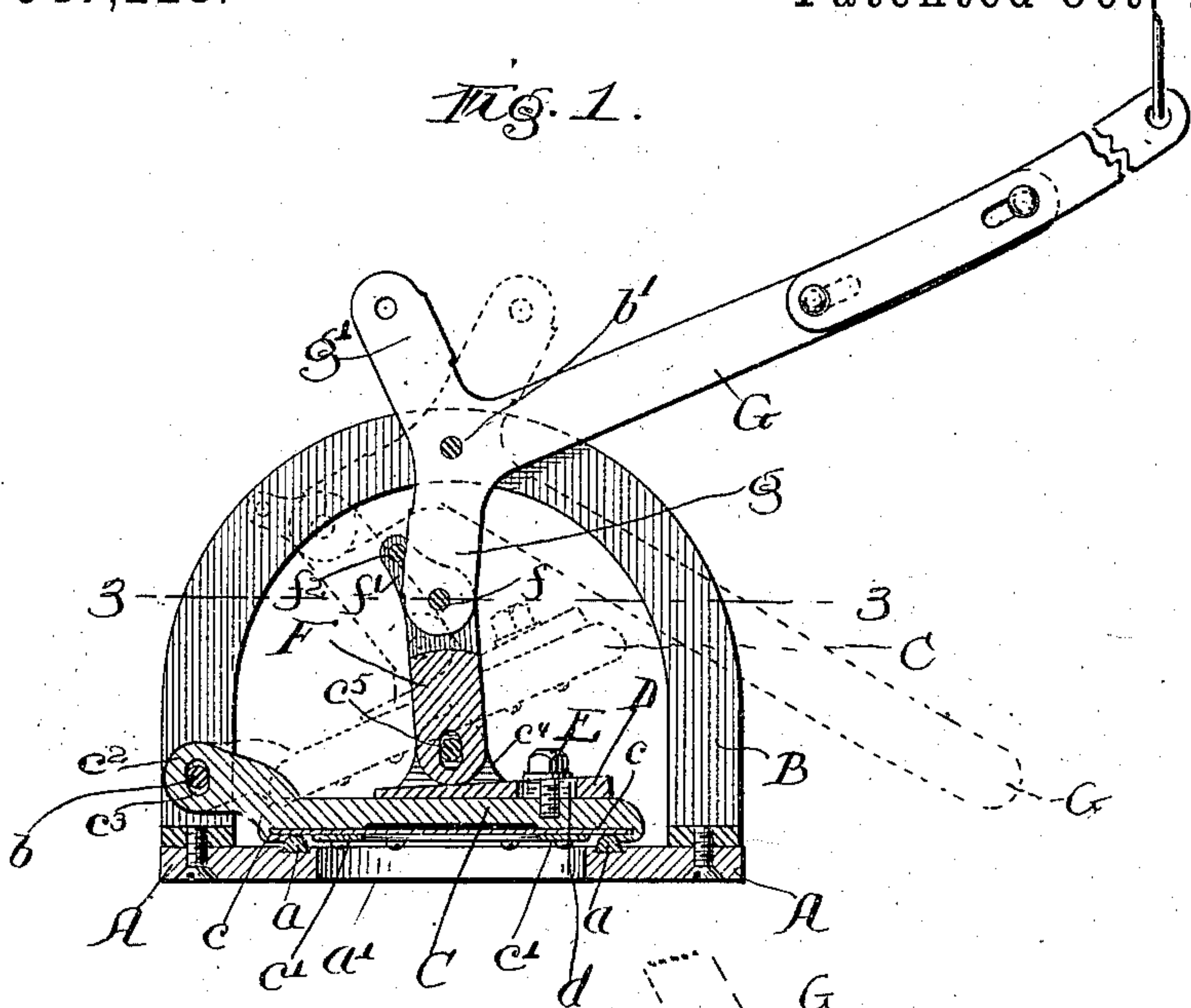


(No Model.)

W. RADLEY.
FLOAT VALVE.

No. 547,228.

Patented Oct. 1, 1895.



Witnesses:
Chas. Sherwey
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UNITED STATES PATENT OFFICE.

WILLIAM RADLEY, OF SANDWICH, ILLINOIS.

FLOAT-VALVE.

SPECIFICATION forming part of Letters Patent No. 547,228, dated October 1, 1895.

Application filed October 4, 1894. Serial No. 524,864. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM RADLEY, a citizen of the United States of America, residing at Sandwich, in the county of De Kalb, in the State of Illinois, have invented certain new and useful Improvements in Float-Valves, of which the following is a specification.

My invention relates to certain improvements in float-valves, having to do especially with the acquiring of greater power and ease of adjustment, together with compactness and durability of construction.

To such end the invention consists in certain structural features, which will be fully described and definitely claimed in the following specification.

The drawings show three figures for the purpose of illustrating my improvements, of which—

Figure 1 is a vertical diametrical section of a float-valve in the plane of the handle. Fig. 2 is a similar section showing the adjustment for a different use, and Fig. 3 is a horizontal section looking downward from line 3 3 of Fig. 1.

In the drawings, the base of the valve is lettered A and is provided with an annular valve-seat *a*, preferably of Babbitt metal and surrounding a circular opening or port *a'*. A double yoke B is secured to the opposite sides of the base A and spans the valve at a sufficient height to permit of the working of the valve within. The valve itself C is preferably provided upon its under face with a rubber cushion *c*, held to the valve by an annular plate *c'*. At one side of the valve is a projection *c²* containing a vertically-elongated slot *c³*. This projection extends between the two members of the double yoke, and a pin *b* is passed through said members and the slot, loosely pivoting the valve in the yoke. This pivot guides the general movement of the valve, but sufficient play is allowed by means of the slot to insure the perfect seating of the valve throughout its bearing-surface. Upon the top of the valve C are two brackets *c⁴*, upon opposite sides of the center, and a wedge D is provided of the proper width to slip between these brackets. A set-screw E holds the wedge to the valve, and a slot *d*, through which said set-screw passes, enables the wedge to be adjusted lengthwise. Above this wedge

a pin *c⁵* furnishes a loose pivot for a link F, pivoted at its opposite end by means of a pin *f* to one of the short arms *g* of a T-shaped lever G, which is pivoted to the center portions of the two members of the yoke B by means of the pin *b'*, passing through the junction of the three arms of the T-lever. The link F extends upward and laterally to form an arm *f'*, carrying a pin *f²*, which bears against the arm *g* of the T-lever when in the position seen in Fig. 1, and the lower end of the link is of sufficient length to bear upon the wedge D before it reaches the downward limit of its play upon the pin *c⁵*.

The common use of this valve is upon the inlet-pipe which enters through the bottom or sides of a tank designed to contain water or other liquid. The base of the valve A is secured by suitable means (not here shown) to the upwardly-projecting end of the inlet-pipe, and a float resting upon the top of the water is connected by means of a cord, wire, or chain with the long arm of the T-lever, the length of the connecting device being so proportioned that the long end of said handle or lever will not be raised until the surface of the water has reached the limit beyond which it is not desired to go. The weight of the handle when the valve is adjusted in this way holds the parts in the position shown by dotted lines in Fig. 1, where the valve is seen as wide open. When the water has risen to the predetermined limit, the float raises the handle until the position shown in full lines in Fig. 1 is reached, when the short arm *g* of the T-lever G and the link F are almost in line, so that the principal force of the water beneath the valve is sustained by the yoke B, and but little force is required to be applied to the handle G to keep the valve closed. The pin *f²* acts as a stop to prevent the pivot *f*, between the short arm *g* and the link F, from reaching the center line between the pivots *b'* and *c⁵* and thus locking the valve and preventing its free opening when the pull of the float is relieved. The horizontally-movable wedge D enables the pressure upon the valve when this stop is reached to be adjusted to a nicety and provides means for accommodating the valve to any difference of thickness in case the rubber surfacing *c* should need to be replaced.

These valves are also used upon outlet-pipes for the purpose of opening said pipes when the water has reached a predetermined level, and for that purpose the handle is provided with a second short arm g' at a slightly-different angle to the long arm, and the change from an inlet to an outlet pipe is accomplished by removing the pin f , throwing the long arm of the lever G over into the position seen in Fig. 2, and replacing the pin f to connect the short arm g' with the link F . In this position the operation of the valve is exactly reversed, although the working parts are substantially the same and operate in the same manner.

The construction above described makes up a valve of immense power when in proper adjustment. The possibility of a nice adjustment enables the toggle formed by the link F and one of the short arms of the handle-lever to be brought almost or quite into a straight line at the time of the pressure of the valve upon its seat reaches the predetermined maximum, and the stop f^2 prevents the passing of the center line of the toggle.

I claim as new and desire to secure Letters Patent—

1. The combination, in a float valve, of a valve seat, a hinged valve, a link pivoted to the valve at one end and an operating lever having three arms one of which is adapted for connection with the float, and the other two are arranged at different angles to the first and adapted to be alternately pivoted to the

other end of the link, whereby the lever may be operated upon either side of the valve and yet work at a convenient angle to the valve; substantially as described.

2. The combination with a valve, of a horizontally adjustable wedge upon its outer surface, an operating lever connected to the valve by means of a link pivoted to said valve above the wedge, the joint at the latter pivot being sufficiently loose to allow the end of the link to bear upon the wedge, and also to permit of the adjustment of the latter; substantially as described.

3. The combination with a valve, of the seat, A , the yoke, B , the valve, C , loosely pivoted to the yoke and bearing upon its surface the laterally adjustable wedge, D , and the brackets, c^4 , the operating lever, G , pivoted to the yoke substantially above the center of the valve and having an arm extending in the direction of said valve, a link, F , pivoted to the end of said arm and also to the brackets, c^4 , and having sufficient play upon the latter pivot to allow the end of the link to rest upon the wedge, D , in all of its desired adjustments, and a stop, f^2 , to prevent the link and the arm to which it is pivoted from passing from one side to the other of a straight line; substantially as described.

WILLIAM RADLEY.

Witnesses:

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