

No. 646,596.

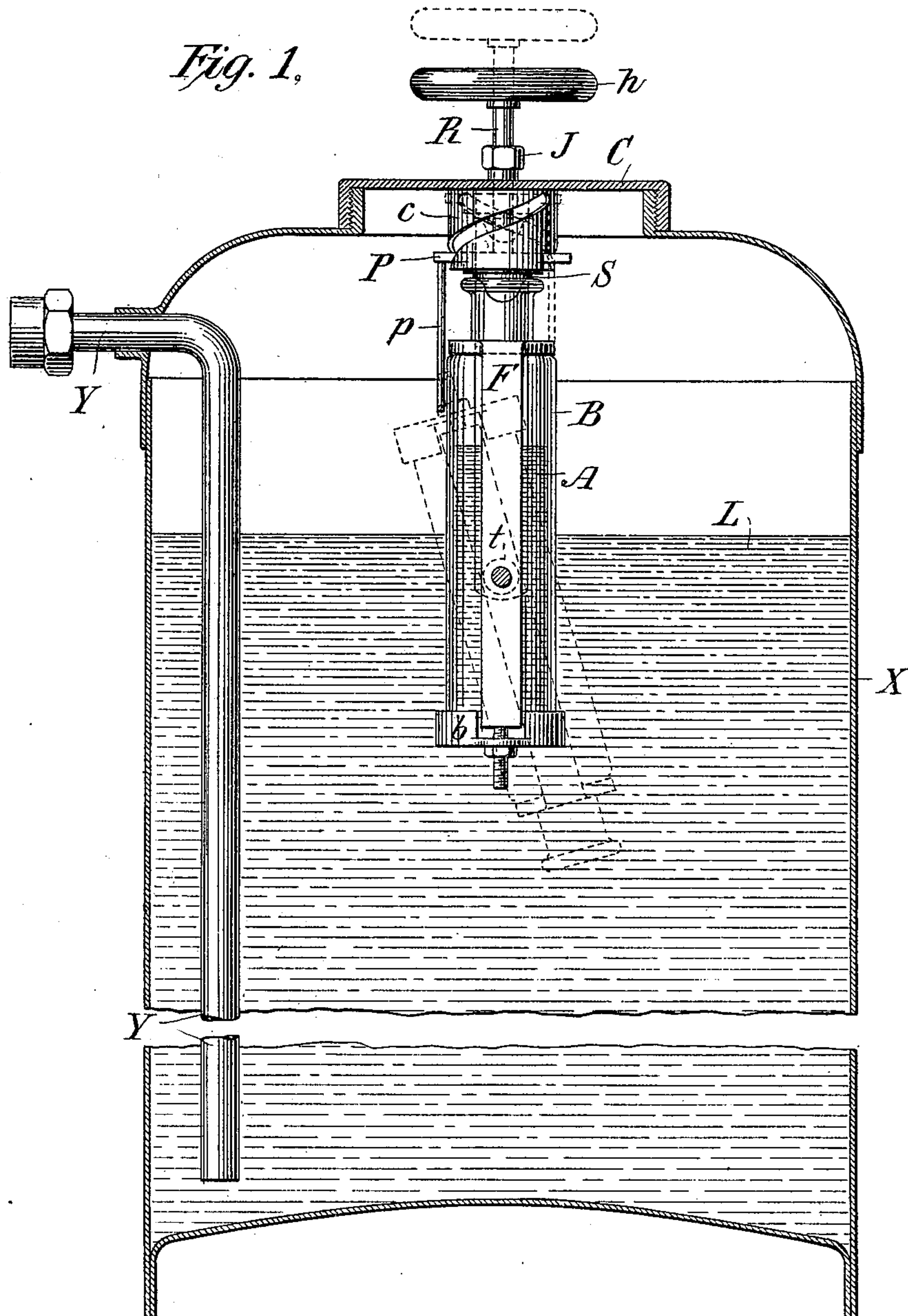
Patented Apr. 3, 1900.

B. S. BROWN.  
FIRE EXTINGUISHER.

(Application filed Nov. 5, 1896.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:  
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INVENTOR:  
*Benjamin S. Brown*  
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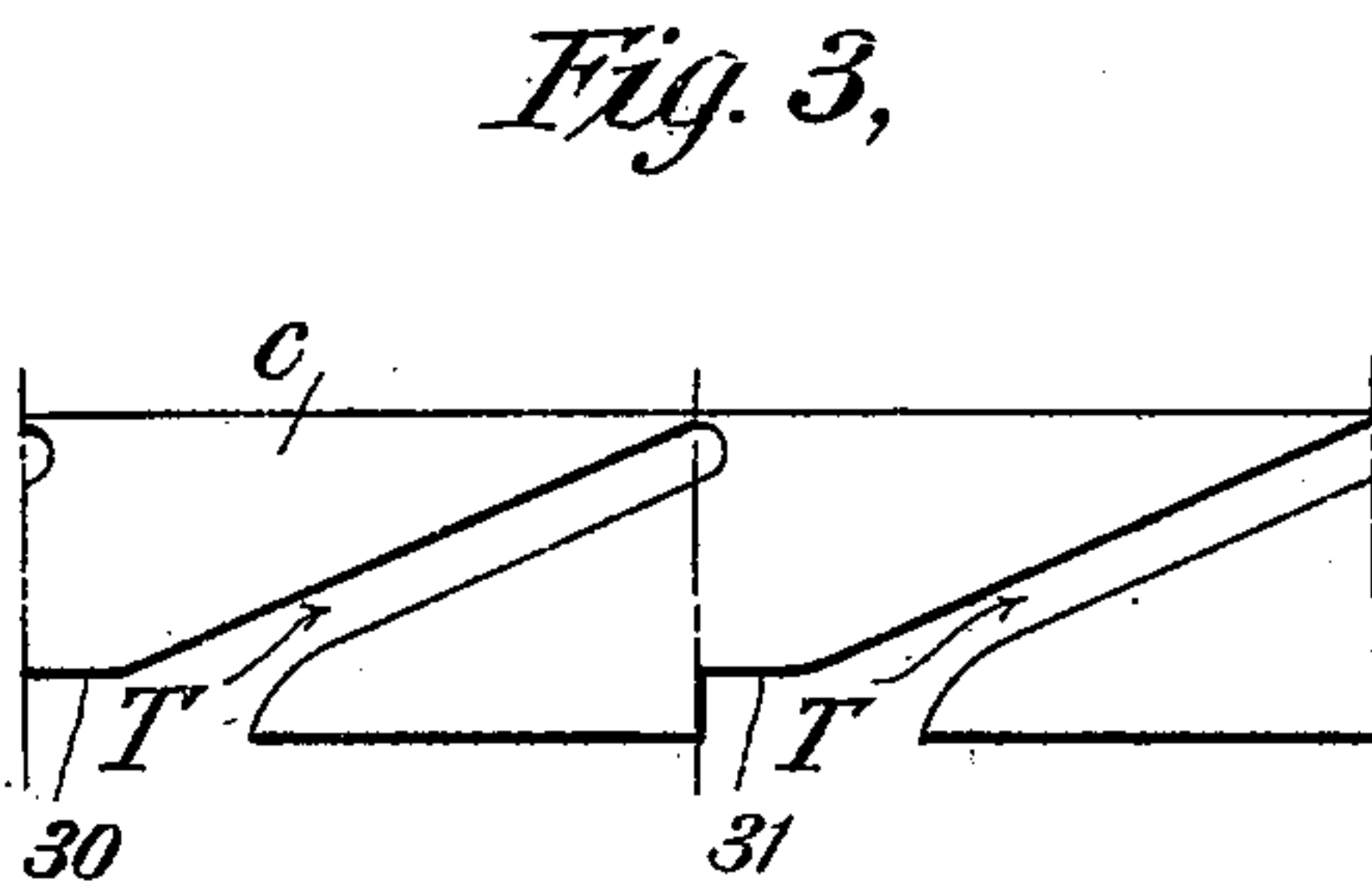
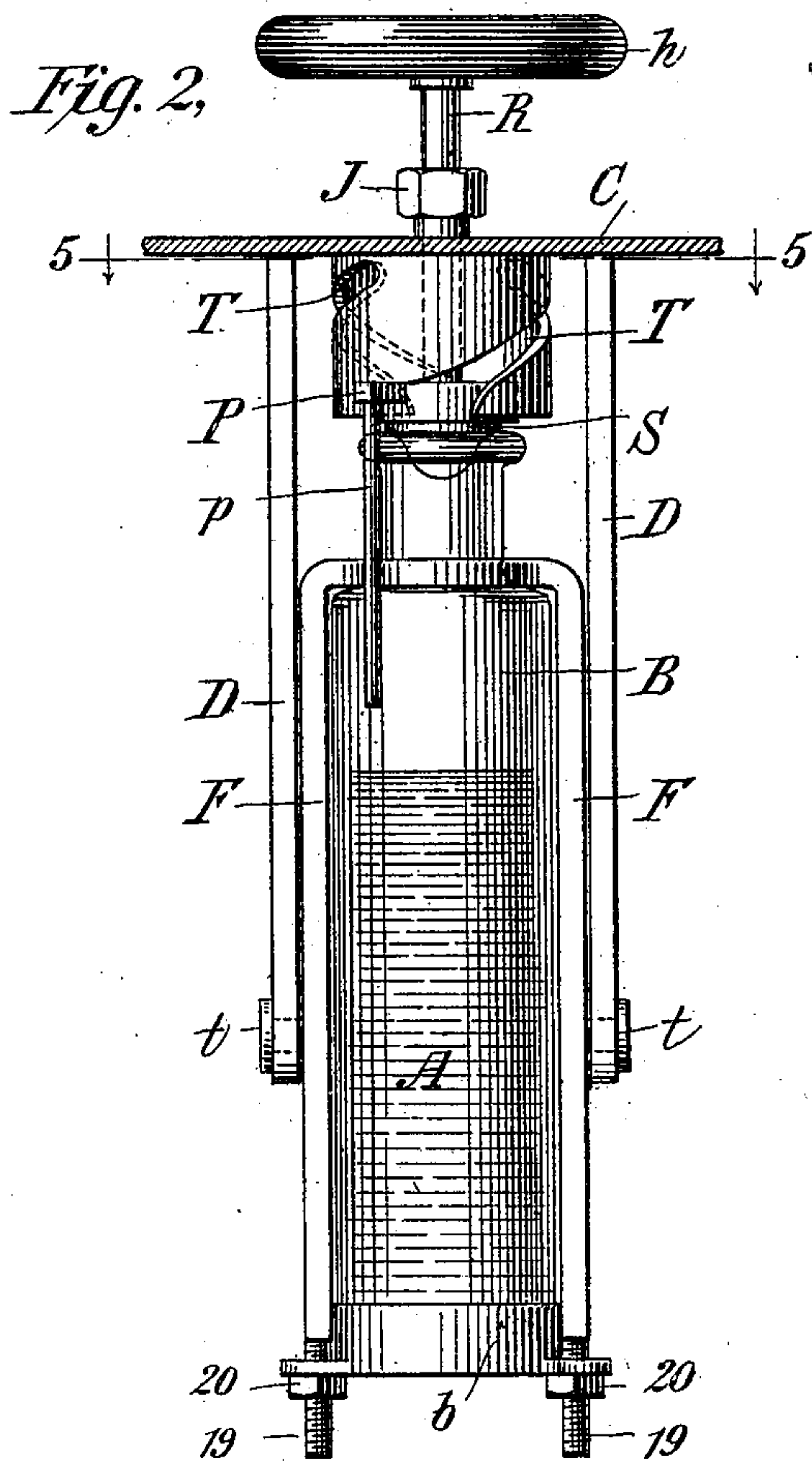
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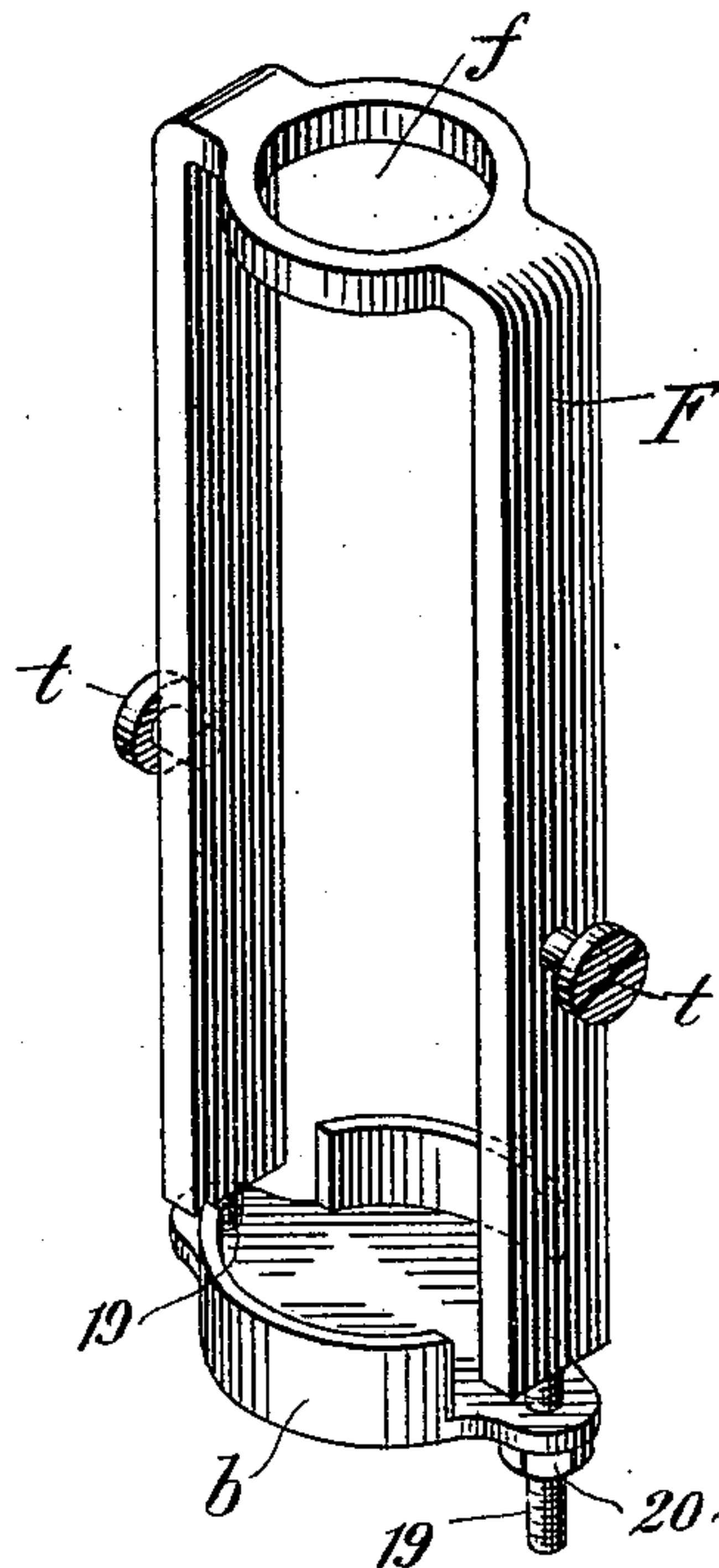
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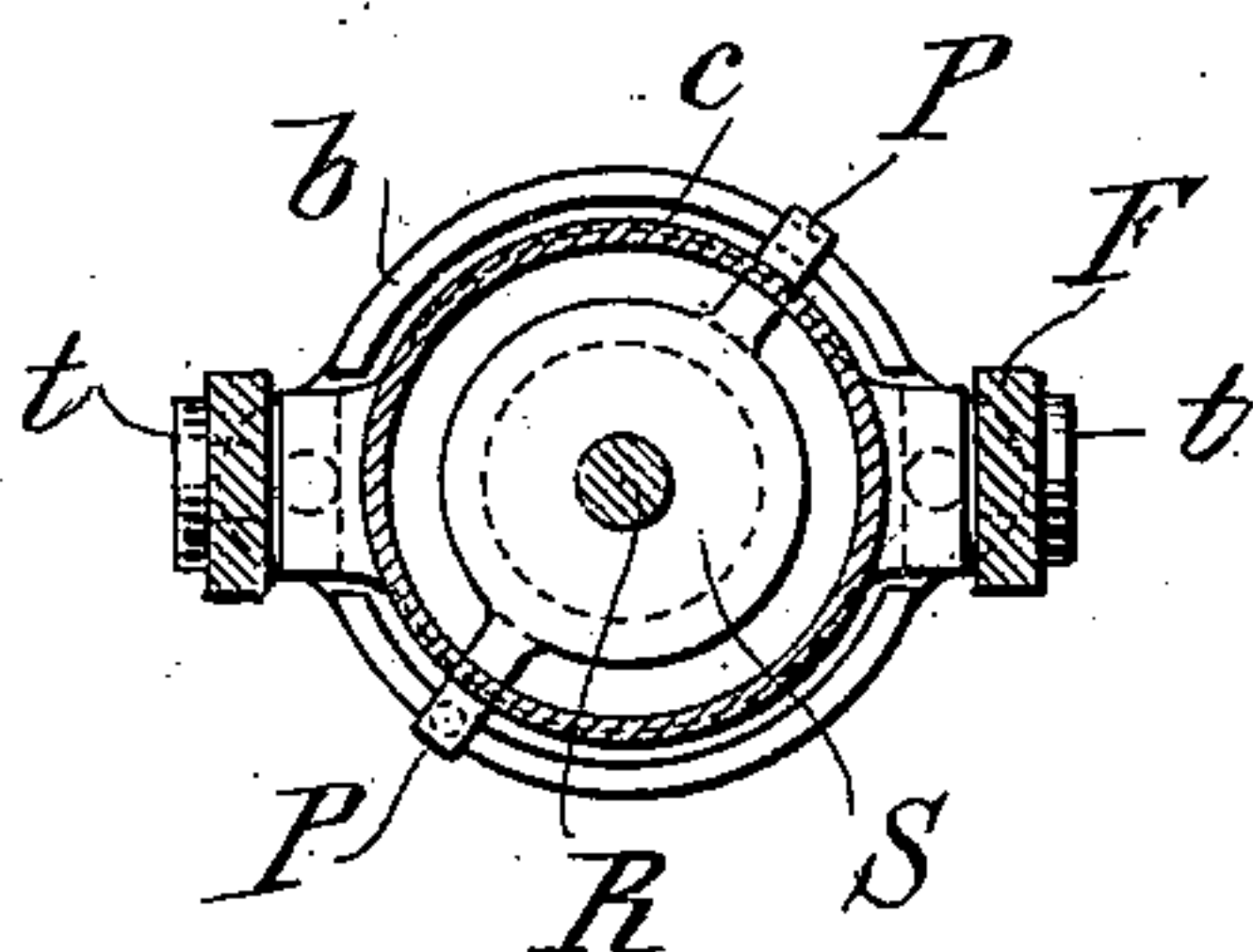
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*Fig. 4,*



*Fig. 5.*



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# UNITED STATES PATENT OFFICE.

BENJAMIN S. BROWN, OF NEW YORK, N. Y.

## FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 646,596, dated April 3, 1900.

Application filed November 5, 1896. Serial No. 611,092. (No model.)

*To all whom it may concern:*

Be it known that I, BENJAMIN S. BROWN, a citizen of the United States, and a resident of New York, in the county and State of New York, have made certain new and useful Improvements in Fire-Extinguishers, of which the following is a specification.

My invention is an improvement in chemical fire-extinguishers.

Chemical fire-extinguishers generally consist of a chemical solution, usually alkaline, in a tank or vessel, and a second smaller vessel or receptacle, located within the first, containing a second and different chemical compound or solution, such as an acid. To bring the apparatus into use, the two solutions are caused to unite.

The object of my invention is to improve the construction of the interior or acid-holding receptacle and its operating mechanism.

I provide a suitable receptacle, like a glass bottle, and support it on a frame by means of trunnion bearings or pivots, connecting the receptacle with its frame at a point below the center of gravity of said receptacle. The stopper is supported on a rotary rod which projects through the wall or cover of the outer tank. There are radial projections, one or more, from this stopper-support, and in close proximity thereto there is a helical track or groove with which these projections engage, so that upon rotating the stopper-support the stopper is withdrawn and removed from the vessel by a single continuous positive movement. The vessel being thus released will ordinarily upset by the operation of gravity; but in order to insure the upsetting even under abnormal conditions I provide a projection which is fixed to the stopper or stopper-carrier and which extends a short distance along the exterior surface of said vessel, so that as the stopper is withdrawn and removed the projection engages the exterior of the receptacle after the stopper is disengaged and while it is being carried up out of the way, and the receptacle is thus tilted or upset by a positive impulse which can never fail to be effective even when the receptacle is at rest, as might be the case if the extinguisher remains in a stationary position and undisturbed. I may, however, in most cases safely

avoid the use of this positive tilting device and depend upon gravity alone to upset the unequally-balanced receptacle.

The accompanying drawings illustrate my invention.

Figure 1 is a complete vertical cross-section of the tank, showing the acid-holder in complete operative position. Fig. 2 is a complete detail view of the acid-holder and its operating mechanism. Fig. 3 is a view of the helical groove or track produced. Fig. 4 is a view of the frame or carrier. Fig. 5 is a cross-section on the line 5, Fig. 2.

X is a tank holding a liquid L, such as the well-known solution of water and soda.

B is the holder, in the form of a glass bottle, containing an acid solution A. The bottle B is supported in a frame F, its neck projecting through the aperture *f* at the upper end. The frame has a removable bottom *b*, secured by means of screws 19 and nuts 20.

C, Figs. 1 and 2, is a cover for the tank X, which screws into position. Depending from C are two parallel rods or bars D. The frame F is supported at the ends of bars D upon pivoted or trunnion bearings *t* at points below the center of gravity of frame F and bottle B, so that when the bottle is free it will assume a position with its opening or mouth downward.

S is a stopper, of rubber or some acid-proof material, tightly closing the mouth of the bottle. Stopper S is supported upon a stopper-carrier or rotating rod R, having a handle *h* in the form of a wheel. The rod R passes through a stuffed box J in the cover C.

*c*, Fig. 3, is a brass plate having tracks or grooves T, the edges of which terminate in straight edges 30 and 31. The plate *c* is arranged in ring form, as shown in Figs. 1 and 2, and fixed to the cover C, so that the track T assumes the form of a helical line or groove. Projecting from the rim of the stopper S at diametrically-opposite points are lugs or projections P. The lugs P travel upon the edge of the groove or track T. When the bottle is closed and stopper S in position, the lugs P lodge under the straight surfaces 30 and 31. Depending from one of the lugs P is a rod *p*, and the radial distance of this rod *p* from the center of the rod R and the bottle B is sub-



stantially the same as that of either vertical member of the frame F.

In Fig. 1, Y is a discharge-tube extending to the bottom of the tank X.

5 Normally the acid-holder is in the position shown in Fig. 2—the stopper locked in position in the bottle by the engagement of the lugs P with the edges or surfaces 30 and 31. To operate the apparatus, the handle H is rotated the reverse of clockwise. The lugs P travel in the groove or track T, unlocking the stopper and simultaneously withdrawing it in a vertical line, from which it results that the bottle is opened and the stopper positively withdrawn to a distance beyond the point of possible engagement with the bottle or holder, and this is accomplished by a simple single continuous movement amounting to a semi-rotation of the wheel *h*. As the stopper rotates the rod *p* moves with it and engages the upright member of the frame F, imparting movement to the bottle, which acts to upset it, causing it to assume the position shown in dotted outline in Fig. 1.

What I claim, and desire to secure by Letters Patent, is—

1. In an acid-holder for chemical fire-extinguishers the combination of a suitable vessel or receptacle, a supporting-frame therefor, pivotal bearings connecting points on said vessel with said frame, a stopper located on a movable support, and an arm or projection from said stopper-support engaging said vessel to impart movement thereto as the stopper is withdrawn, substantially as described.

2. In a fire-extinguisher, the combination with the inclosing casing, of a pivotally-mounted inner vessel, a device designed to engage said vessel and hold the same in a vertical position, means for operating said holding device from the outside of the casing, and a trip carried by said holding device and designed to overturn said inner vessel.

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Witnesses:

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