

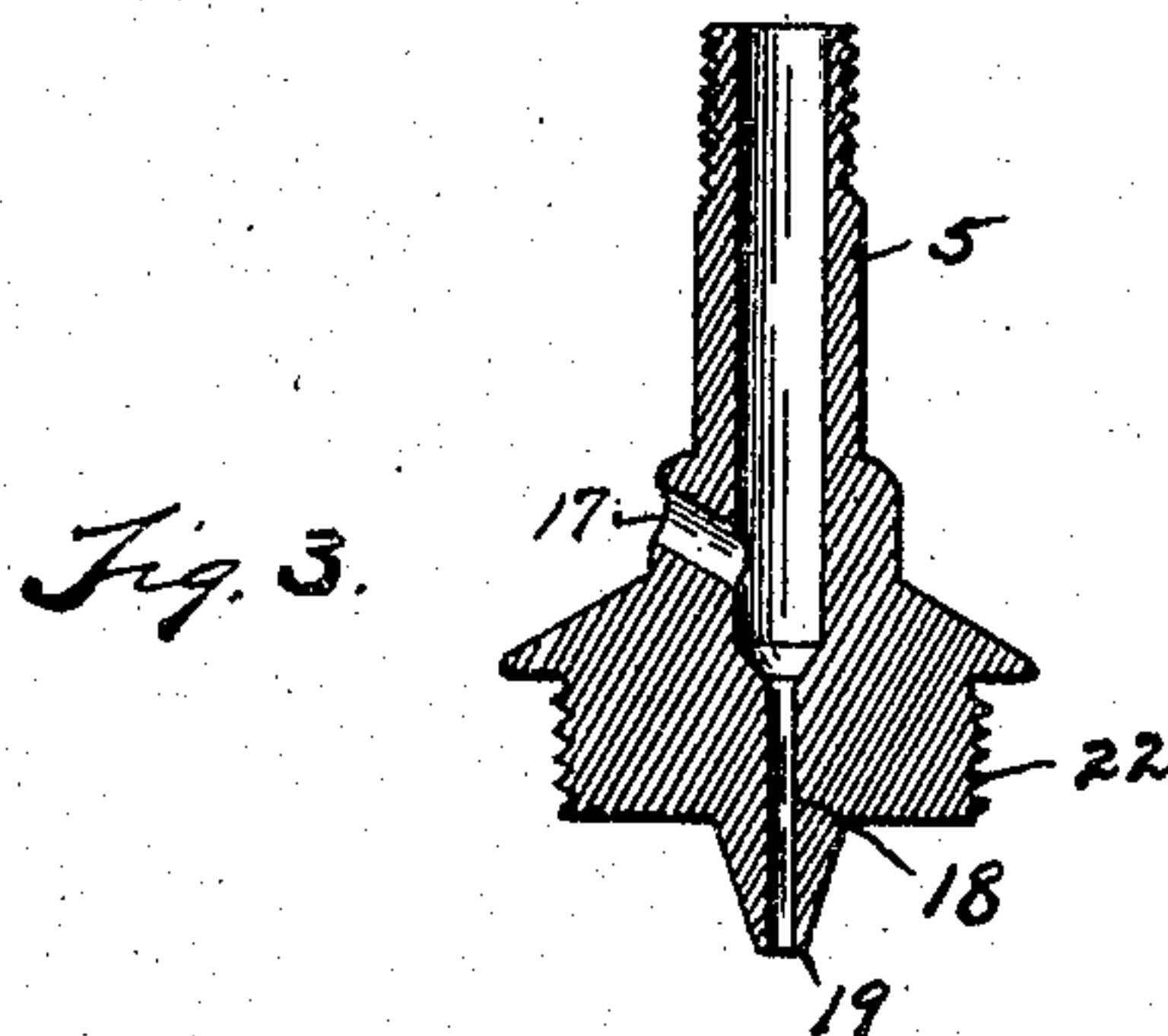
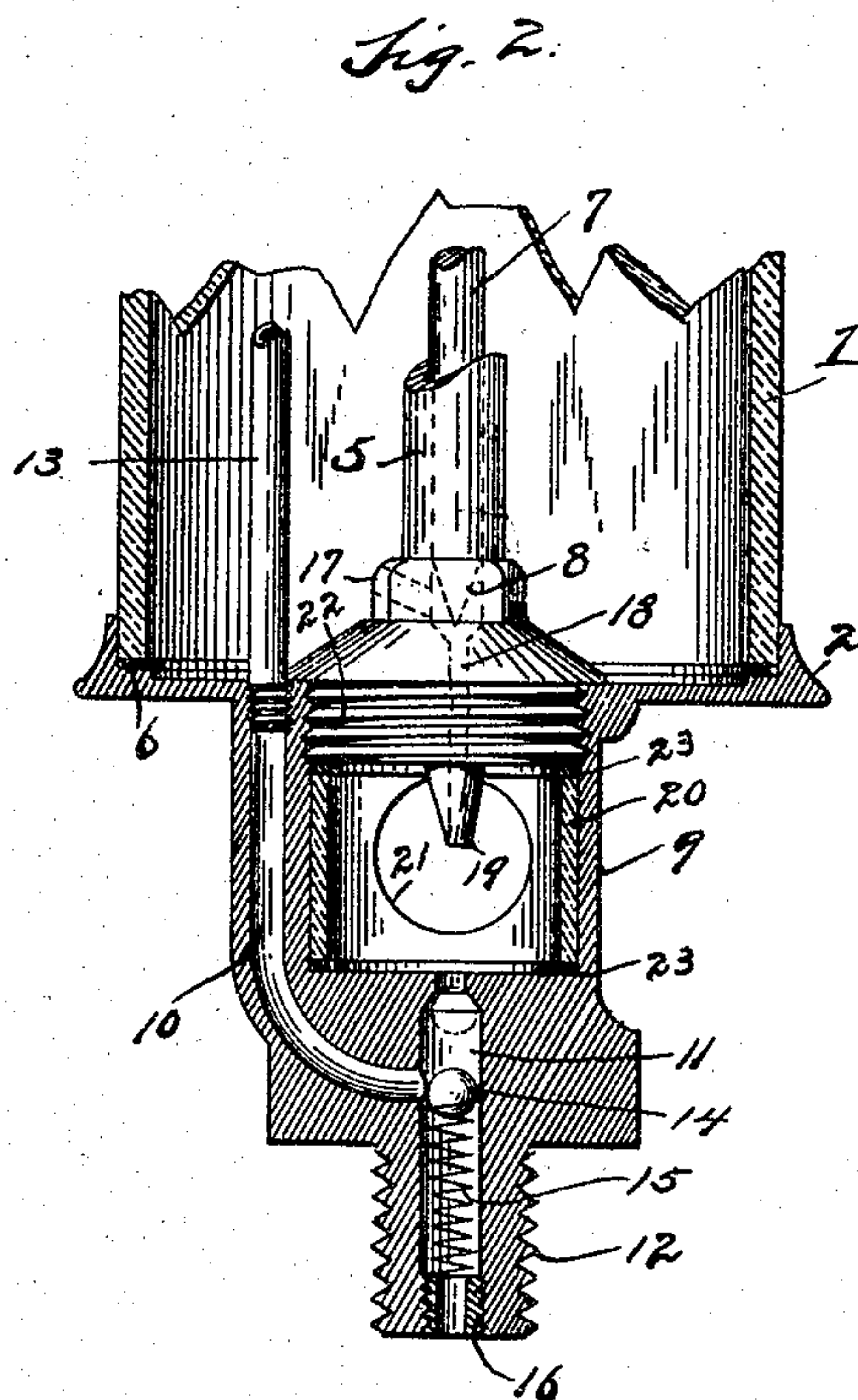
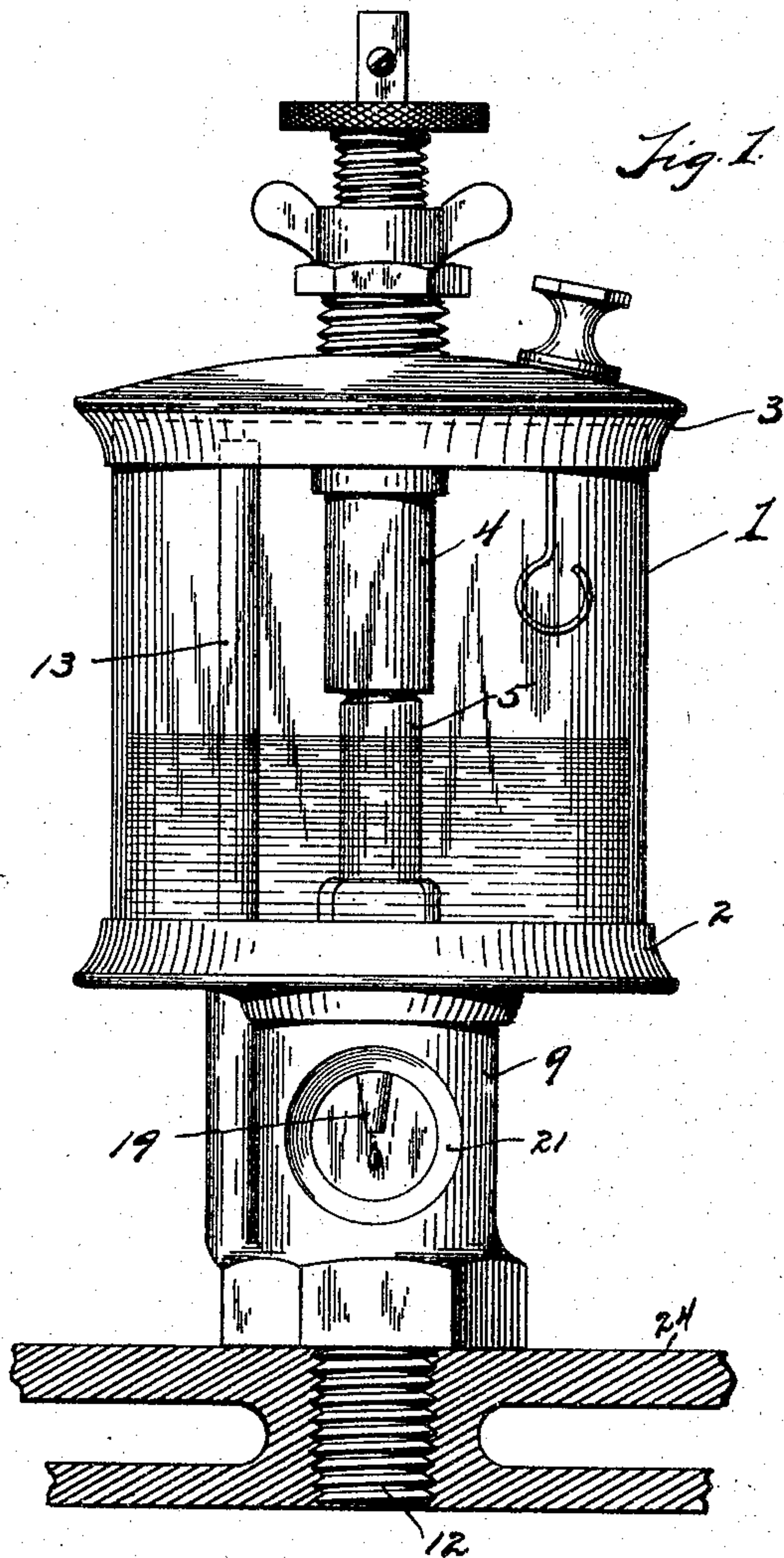
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G. M. WOLCOTT & R. DAVIDSON.

LUBRICATOR.

APPLICATION FILED MAY 7, 1904.



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UNITED STATES PATENT OFFICE.

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LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 782,590, dated February 14, 1905.

Application filed May 7, 1904. Serial No. 206,821.

To all whom it may concern:

Be it known that we, GEORGE M. WOLCOTT and ROBERT DAVIDSON, citizens of the United States, residing at Detroit, in the county of Wayne, State of Michigan, have invented certain new and useful Improvements in Lubricators; and we do 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 the figures of reference marked thereon, which form a part of this specification.

This invention relates to a cylinder-lubricator for explosive-engines; and it consists in the construction and arrangement of parts hereinafter fully set forth, and pointed out particularly in the claims.

The objects of the invention are to produce a bull's-eye sight forced-feed lubricator of the character described wherein the arrangements are such as to provide for forming the post and feed-nozzle of an integral part which screws through the center of the bottom of the cup into the top of the sight-chamber, allowing the putting in of the packing and sight-feed glass from the top and securing the same in position; for forming the bottom of the cup and the shank of an integral part and the delivering of the pressure through a cored passage and stand-pipe to the top of the cup at each explosion, at the same time providing an automatic check-valve for preventing the exploded charge from entering the sight-chamber and spattering the oil upon the sight-feed glass. The above objects are attained by the structure illustrated in the accompanying drawings, in which—

Figure 1 is a view, principally in elevation, showing the application of our lubricator to the cylinder of an explosive-engine. Fig. 2 is a fragmentary view, principally in section, through the bottom and shank of the cup, illustrating the construction and association of parts wherein our invention resides. Fig. 3 is a central vertical section through the post and feed-nozzle.

Referring to the characters of reference,

1 designates the glass body of the oil-cup, 50 which is preferably cylindrical in form and rests upon the annular flanged bottom 2, being confined in place by the annular cap 3, having the depending tapped sleeve 4, which screws upon the threaded upper end of the post 5, whereby the top and bottom are drawn together upon the glass body to secure said body in place, suitable washers 6 being employed between the ends of the cylindrical body and the top and bottom of the cup. 60 Passing through the top of the cup, the sleeve 4, and the post 5 is a vertically-movable valve-rod 7, carrying the needle-valve 8, (shown by dotted lines in Fig. 2,) which is adapted to control the passage of oil from the cup or body of the lubricator, all of which parts are in common use and will not require further explanation.

In lubricators of this class it has been difficult to provide for regularly feeding the oil into the cylinder, because of the fact that the exploded gases under pressure at each impulse in the cylinder pass through the oil-discharge opening into the sight-chamber and drive out of the oil-delivery passage the oil therein, scattering it over the sight-feed glass, so as to obscure the sight and creating such pressure in the sight-chamber as to prevent a proper flow of lubricant from the oil cup or reservoir. We overcome these objectionable features by forming in the shank 9 a cored passage-way 10, which passes around one side of the sight-chamber in said shank and communicates with the oil-discharge port 11, leading from the sight-chamber downwardly through the threaded stem 12, the upper end of said cored passage-way communicating with a stand-pipe 13, which projects upwardly within the cup or reservoir to a point above the oil-level. Within the oil-delivery port 11 is a ball-valve 14, which is supported upon a coiled spring 15, standing within said port and maintained in place by the hollow plug 16, which is secured into the lower end thereof.

Oil flows from the body of the lubricator through the oil-discharge opening 17, which passes through the side of the post 5 and com-

municates with the oil passage-way 18, leading downwardly through said post to the feed-nozzle 19, from the lower end of which the oil drops into the upper end of the oil-discharge port 11. The passage of the oil from the end of the nozzle 19 is rendered visible by reason of the cylindrical glass 20, which occupies the sight-chamber in the shank 9, through the walls of which are the opposed sight-openings 21, which afford a view of the feed-nozzle 19. The lower end of the post 5 is enlarged and threaded, as shown at 22, which enables said enlarged part to be screwed into the opening in the bottom of the cup, which is of the area of the sight-chamber, whereby said post when screwed into place closes the upper end of said chamber, and at the same time is made to confine the cylindrical glass 20 in place by binding it between the washers 23, which engage the opposite ends thereof. The size of the opening communicating with the sight-chamber, which is filled by the enlarged portion of the post 5, enables the glass 20 to be placed in the sight-chamber from the top, said post securely retaining the glass in position when it is screwed into place. At the same time the oil-nozzle 19, which is made integral with said post, finds its correct position over the oil-discharge port 11.

With the parts assembled, as shown in Fig. 2, an explosion in the cylinder 24, into which the threaded stem of the shank is screwed, will cause a rush of the expanded gases upwardly through the port 11, which will carry the ball-valve 14 upwardly and seat it against the contracted wall at the upper end of said port, as shown by dotted lines in Fig. 2, thereby preventing the passage of the gases under pressure into the sight-feed chamber, but allowing said gases to escape upwardly through the cored passage 10 and stand-pipe 13 to the top of the cup, whereby a pressure is created upon the top of the oil which forces a drop from the nozzle 19 at the time when the piston of the cylinder is on the return stroke and a partial vacuum is created back of the piston, which assists in drawing the oil downwardly past the ball-valve into the cylinder, as will be readily understood. By this arrangement the oil is prevented from being scattered upon the sight-feed glass and its proper feed interrupted. At the same time a pressure is created in the oil-cup at each explosion above the level of the oil, which renders positive the feed of the oil through the nozzle 19.

It will be noted that the bottom 2 of the cup is formed integral with the shank 9, making a very strong and compact structure and simplifying the manufacture of the lubricator.

Having thus fully set forth our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a lubricator, the combination with the reservoir, of a sight-feed chamber communi-

cating with the reservoir, there being an oil-discharge port leading from said sight-feed chamber and a passage-way connecting said oil-discharge port with the top of the reservoir, and means for automatically closing the opening of the oil-discharge port into the sight-feed chamber upon the creation of an upward pressure within said port.

2. In a cylinder-lubricator for explosive-engines, the combination with the reservoir, a sight-feed chamber communicating with the reservoir, there being an oil-discharge port connecting the sight-feed chamber with the engine-cylinder, a check-valve in said port to automatically close the upper end thereof, there being a passage-way leading from the oil-discharge port below the seat of said valve and communicating with the reservoir above the oil-level.

3. In a cylinder-lubricator for explosive-engines, the combination with the reservoir, a sight-feed chamber communicating with the reservoir through the bottom thereof, there being an oil-discharge port leading from said chamber to the engine-cylinder, a check-valve to automatically close the upper end of said port, there being a passage-way leading from the oil-port to the top of the oil-reservoir, a glass in the sight-feed chamber, a post screwing through the bottom of the cup against said glass, an oil-feed nozzle depending from the center of said post, there being an oil-feed opening through the post and nozzle communicating with the reservoir, and a valve to close said oil-feed opening.

4. In a cylinder-lubricator for explosive-engines, the combination with the oil-reservoir, of the shank depending from the bottom thereof, a sight-feed chamber within said shank communicating through an oil-port with the engine-cylinder, a post screwing through the bottom of the cup into said chamber, a glass located in said chamber confined by said post, there being through the post a valve-controlled oil-feed opening communicating with the reservoir, there being a passage-way communicating with the engine-cylinder and leading to the top of the oil-reservoir.

5. In a cylinder-lubricator for explosive-engines, the combination with the oil-reservoir, the bottom of the reservoir and depending shank formed integral, said shank having a sight-feed chamber therein opening at the top into the reservoir through the bottom thereof, a post and feed-nozzle screwed into the top of the sight-feed chamber, there being through the nozzle and post an oil passage-way communicating with the reservoir, said shank having an oil-feed port formed therethrough connecting the sight-feed chamber with the engine-cylinder, there being within said shank a passage-way connecting said port with the interior of the reservoir, a stand-pipe communicating with said passage-way and terminating at the top of the reservoir above the oil-level

and a valve for automatically closing the upper end of the oil-port leading to the sight-feed chamber.

5 6. A sight-feed lubricator for explosive-engines, comprising a reservoir, a sight-feed feature communicating therewith, there being an oil-discharge port to connect the sight-feed feature with the engine-cylinder, there being a passage-way to connect the engine-cylinder
10 with the reservoir independently of the sight-feed feature, and means for automatically clos-

ing the opening of the oil-discharge port into the sight-feed feature upon the creation of an upward pressure within said port.

In testimony whereof we sign this specifica- 15
tion in the presence of two witnesses.

GEORGE M. WOLCOTT.
ROBERT DAVIDSON.

Witnesses:

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I. G. HOWLETT.