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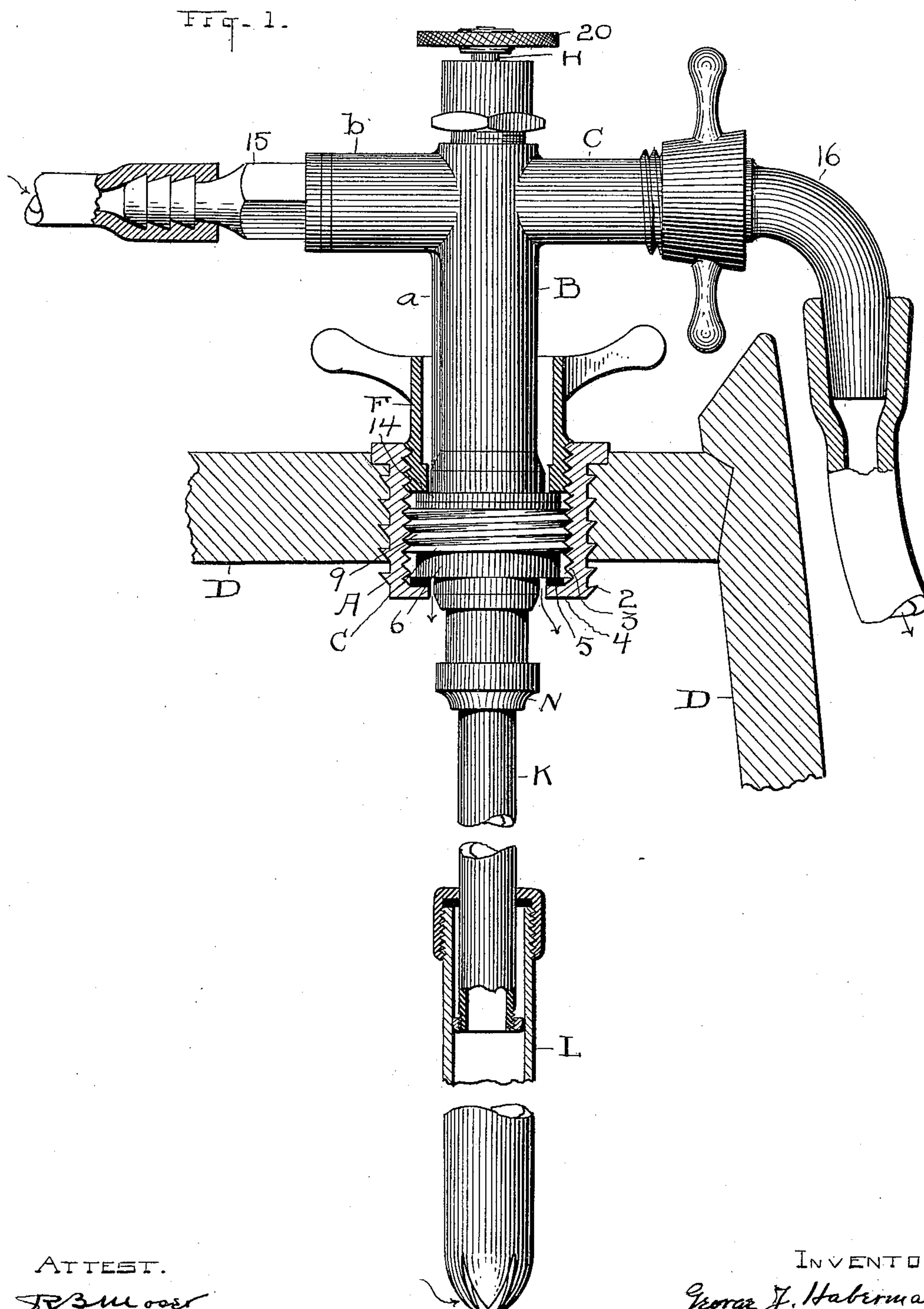
Patented Nov. 22, 1898.

G. J. HABERMANN.  
BUNG AND TUBE.

(Application filed Sept. 7, 1897.)

(No Model.)

2 Sheets—Sheet 1.



ATTEST.

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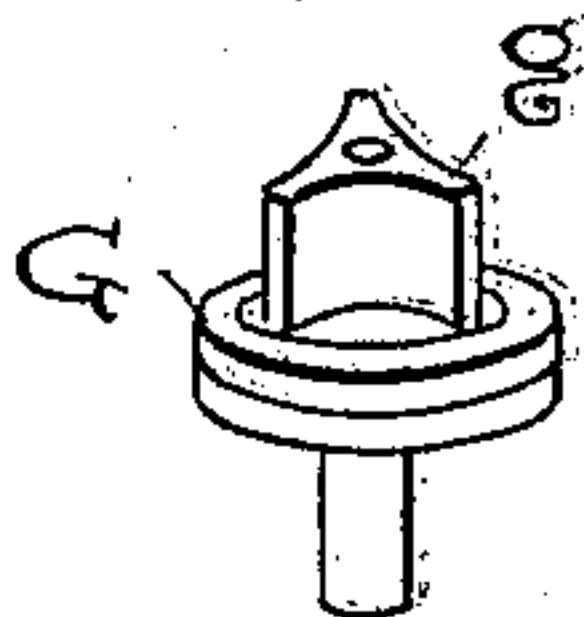
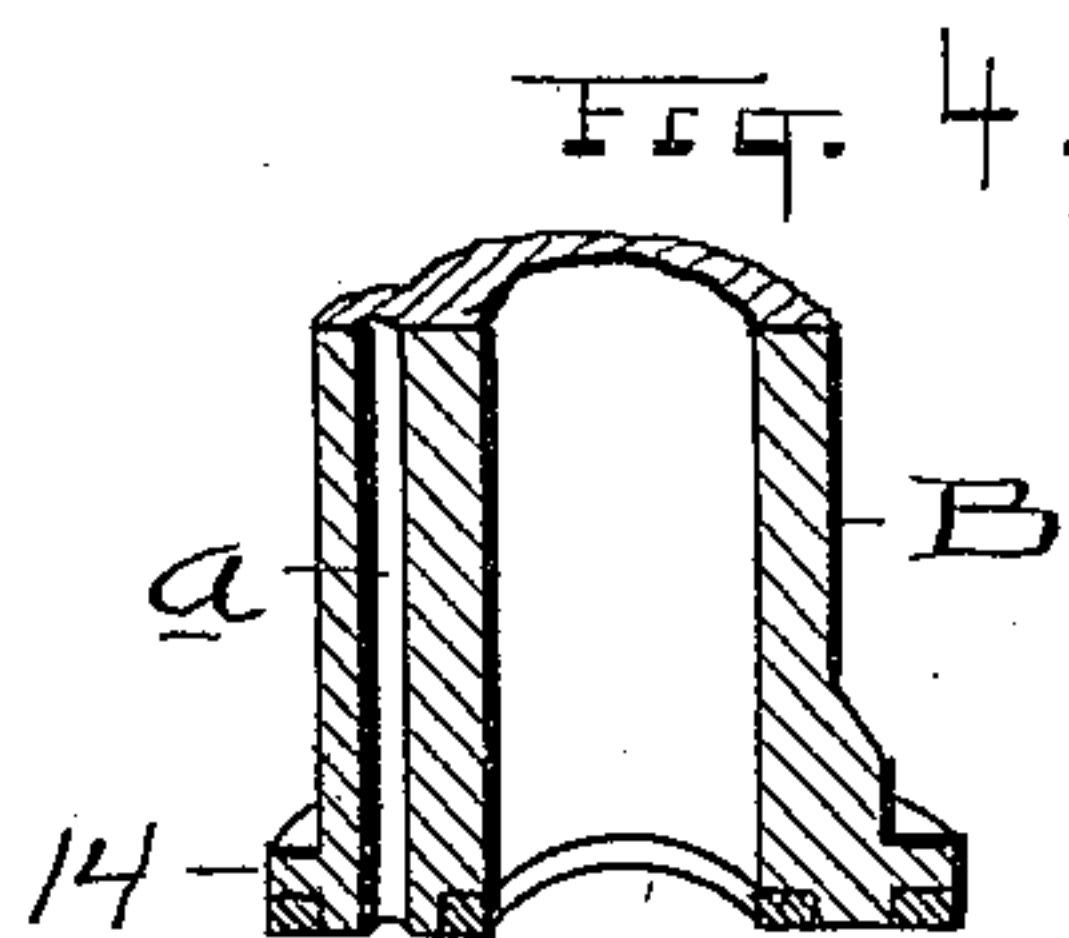
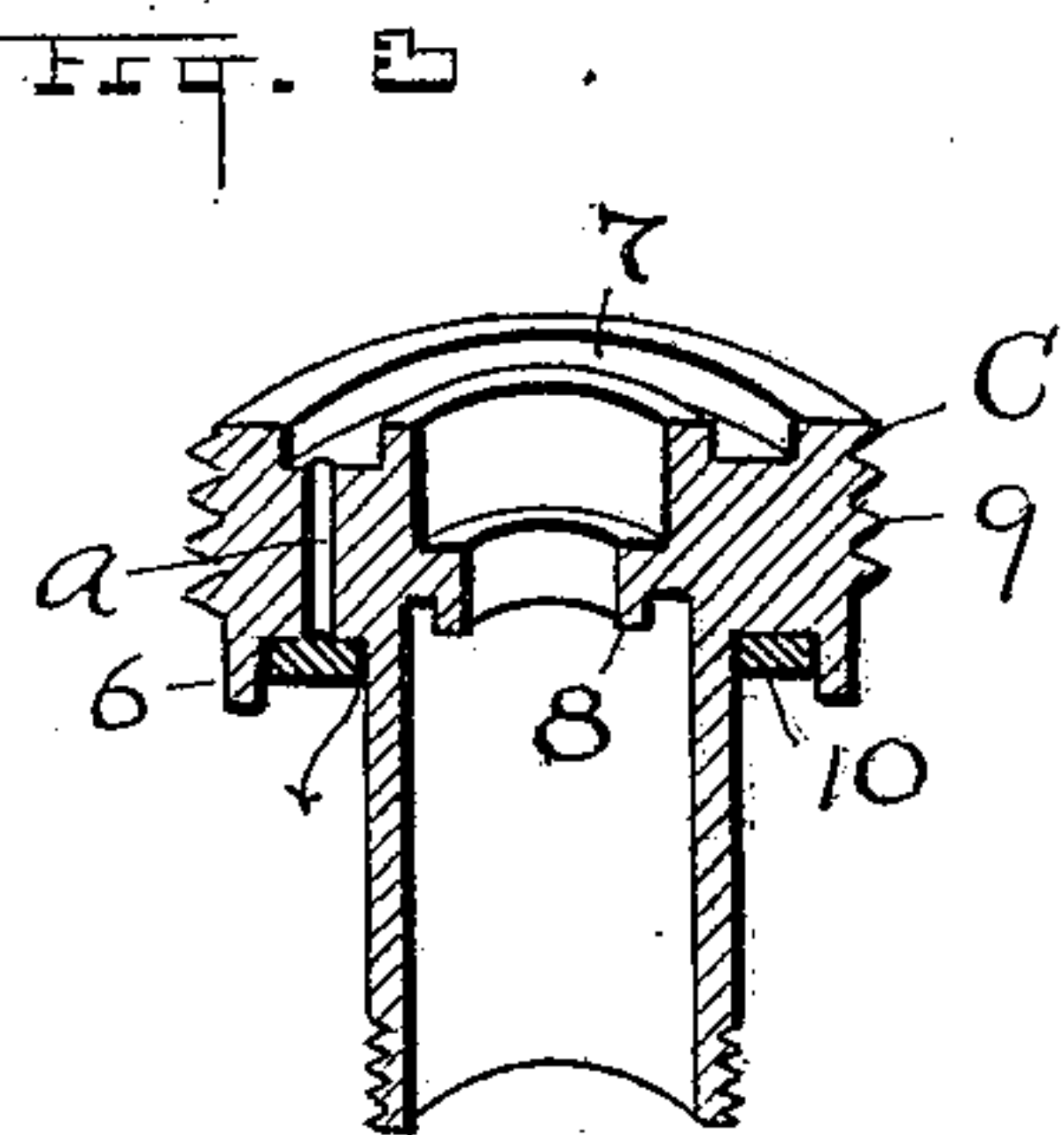
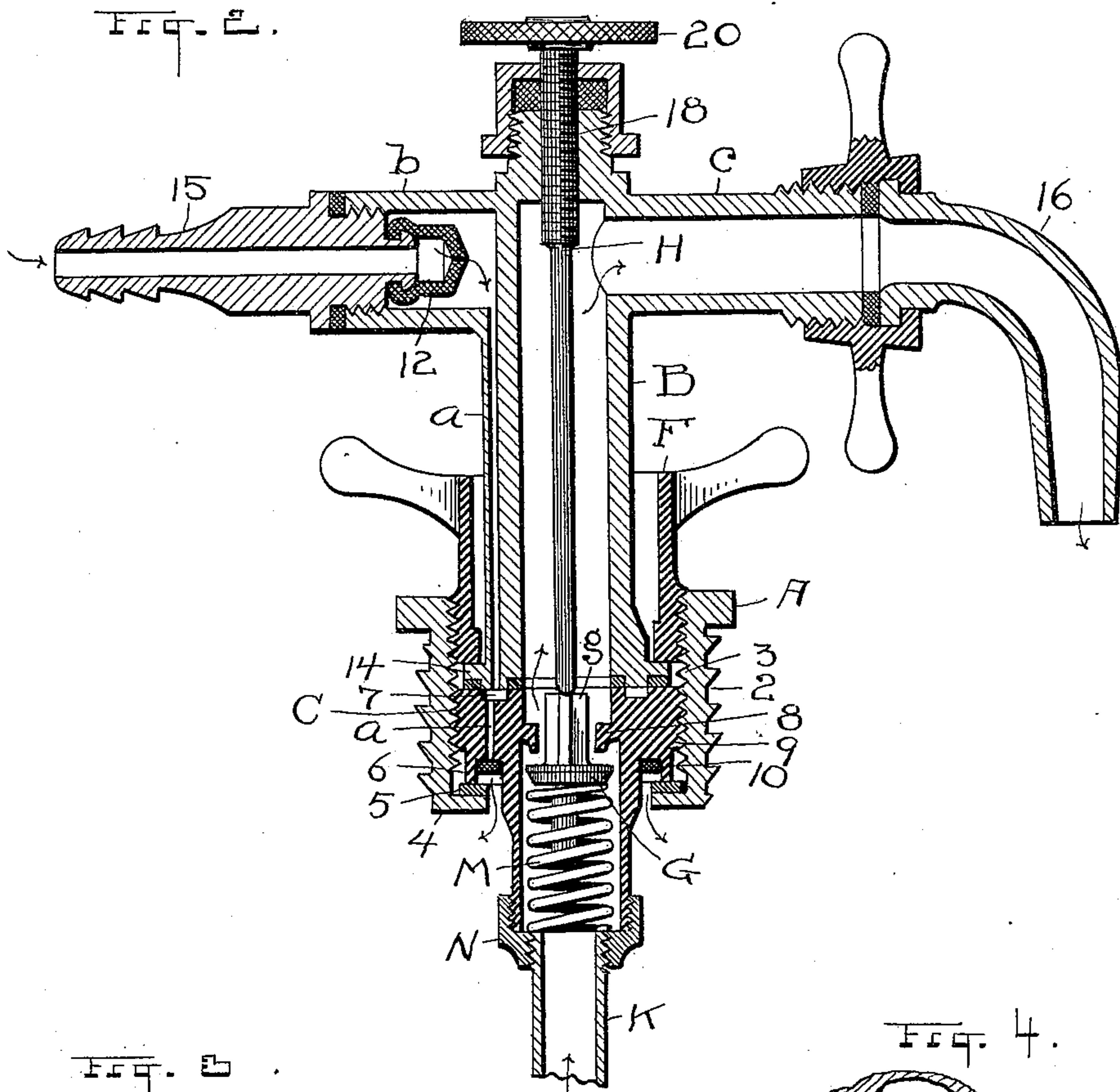
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2 Sheets—Sheet 2.



ATTEST

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# UNITED STATES PATENT OFFICE.

GEORGE J. HABERMANN, OF CLEVELAND, OHIO, ASSIGNOR TO ARTHUR E. NESPER, ALBERT B. CONKEY, AND HARRY HUTCHINGS, OF SAME PLACE.

## BUNG AND TUBE.

SPECIFICATION forming part of Letters Patent No. 614,465, dated November 22, 1898.

Application filed September 7, 1897. Serial No. 650,746. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE J. HABERMANN, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Bungs and Tubes; and I do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in tubes and bungs for barrels and other vessels from which beer, ale, porter, cider, mineral water, and other liquids are drawn under artificially-sustained pressure.

Having reference to the accompanying drawings, Figure 1 is an elevation of the mechanism embodying my invention, partly in section and showing a section of a barrel in which said parts are operatively arranged. Fig. 2 is a vertical central sectional elevation of the bung and the associated tubing. Fig. 3 is a vertical central sectional elevation of the valve-seating plug alone. Fig. 4 is a vertical central sectional elevation of the lower end of the tubing, which extends upward from the bung and is taken on a line to disclose the air passage or duct in one side of said tube, as hereinafter described. Fig. 5 is a perspective elevation of the fluid-valve detached from all the other parts.

The first feature of the invention is the bushing A. This bushing is made of such suitable metal or has such surface coating as will not be attacked by acid or the like, and the said bushing is designed to be set into the barrel by the cooper, or at any rate before the barrel is used, and to become a permanent member of the barrel through all its uses. As here shown, the said bushing is fashioned substantially like an open thimble, except that it has an external thread 2 to engage in the bung-hole and lock the bushing securely therein; an internal thread 3 for the engagement of other parts, as hereinafter described, and an inwardly-projecting flange 4 at its lower end, serving as a support for a packing-ring 5 between said flange and the plug C, threaded into the bushing from above and having a flange 6 about the base of its

head resting on said packing-ring to make a close joint between said parts. Other peculiarities of the plug C are the annular channel or groove 7 in the top of the said plug C, a valve-seat 8 on its inside to seat a valve from below, and threads 9 about its head, by which it is engaged on the thread 3 in the bushing A. A ring or washer shaped valve 10, of leather, rubber, or other suitable material, is located within the downwardly-projecting flange 6 of the plug C and the inwardly-projecting flange 4 of the bushing A, in which space it has play enough to automatically close the air-passage *a* by the pressure from within the barrel. Air for this purpose is forced by a suitable pump or the like (not shown) through the air-inlet nipple 12 down the channel *a*, which is formed in both the tube B and plug C and forms a continuous, though relatively small, air-duct from nipple 12 down into the barrel. The said ring is comparatively free about its edges, so as to afford sufficient inlet-passage for the air; but it is also so located that the normal pressure in barrel or cask D will close the valve tightly upon the small orifice or duct *a*. The said valve is confined from below by flange 4 and packing 5. By having the depression or channel 7 in the top of the plug C the tube B can be set at any position on plug C regardless of the air-channels *a* being coincident, and air will find its way down through plug C from or through said channel. The tube B has a flange 14 about its lower end and is held firmly in operating position by the thimble-shaped hand-nut F, threaded into the bushing A from the top and bearing upon said flange 14.

The tube B is shown in this instance as substantially T-shaped, having an arm *b* for engagement of the air-inlet nipple and its coupling 15 and an arm *c* for the discharge-neck 16, coupled thereto. The valve G for controlling the flow of liquid from the barrel or cask is placed in position for operation when the plug C and the telescopic tubes K and L are placed in the barrel. This is always done before the barrel is regarded as ready for use, and may be done by the cooper when he inserts the bushing A. At any rate the bushing A, plug C, and tubes K and L are



connected as permanent attachments for the barrel and go with the barrel whether it be full or empty. Then the upper tube B and its attached parts are designed to be removable and are connected with barrel after barrel as new barrels are placed on draft. To do this, it is only necessary to place tube B in position, as shown, and fasten it by hand-nut F.

The valve G has an upper guide portion *g* bearing against the inner edge of valve-seat 8 and a spring M beneath and resting on coupling N serves to keep the said valve closed whether there be liquid under draft or not. This is of great advantage, because when a barrel has been drawn off there will necessarily be more or less of the liquid remaining therein, and if it be beer, ale, or the like and the barrel or cask be opened to the outside air the contents will quickly sour; but by keeping the gases and pressure within the barrel as existed when drawing off was finished no injurious effects upon the barrel are experienced, but, on the contrary, it is kept sweet and fresh.

The tubes K and L are made long enough to adapt them to barrels of different sizes and can be used with barrels varying much in size, it being understood that in any case tube L is intended to reach the bottom of the barrel and has openings in its lower end for the admission of the liquid.

Now in order to open valve G more or less to draw liquid from the barrel I employ a rod or stem H, inserted through the top of tube B and arranged to bear upon said valve and press it downward off its seat when it is to be opened. The upper part of stem H is threaded to engage a thread in the tube B, and a hand-wheel 20 controls said stem. Suitable packing prevents leakage about the thread 18 of the stem or rod H, and the said stem is removed with the tube B while the valve G remains within the plug C.

I claim a number of material advantages as resulting from the foregoing construction. In the first place there is no splitting of bungs and consequent leakage of gases, as with the old wooden bung, and no spurting out of liquid, as was sure to occur when the old bung was driven in. In the old way the bung was driven into the barrel and had to be renewed every time the barrel was filled. By my construction one bung lasts as long as the barrel and is never removed and there is no wearing out of the bung-hole, as occurred formerly as the result of frequent changes of bungs, and which would render the barrel worthless. Again, my barrel is always closed whether full or empty and is thus kept clean inside.

The rubber nipple 12 and the ring-valve 10 together form a double security against the escape of air or gas in that direction.

The draft-valve G is regarded as much superior to ordinary stop-cocks, which are liable

to break, while my valve gets tighter under heavy pressure from within.

The tubing may be connected with the barrel through end or side and be arranged upright, as here shown, or sidewise.

I can place my barrel for tap where it is impossible to place a barrel if the inside tubing has to be inserted and removed where the barrel is tapped, because that requires a great amount of room above the barrel. Hence I can put my barrel in a low ice-chest or the like which is covered over comparatively close to the barrel. This is a very material advantage in many places and instances and distinguishes the invention from other devices which can only be used with high ice-chests or like places.

It will of course be understood that the valve ring or washer 10 is in position to be pressed to its seat by the pressure of the gas in the barrel to which it is directly exposed.

To enable the Government stamp to be placed over the bung, it can be countersunk, so as to be flush with the surface of the barrel.

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

1. The bushing having an inwardly-projecting flange at its bottom, the plug threaded into said bushing and having annular channels in its top and bottom, respectively, and an air-passage connecting said channels, a valve in the lower of said recesses to close said air-passage, and the tube set into the said bushing from above and having an air-passage leading to the upper of said channels in the plug, substantially as described.

2. The combination of the bushing having an inwardly-projecting flange at its bottom and the tubular plug having a head engaging said flange and having a vertical air-passage, the tube set into the bushing from the top and provided with an air-passage arranged to communicate with the air-passage in the plug, and a valve to close said air-passage, substantially as described.

3. The bushing to be engaged in the barrel and having the flange 4 at its bottom, in combination with the plug threaded into the bushing and having an annular channel next above said flange 4 and an annular channel 7 in its top and an air-passage *a* connecting said channels, the tube B threaded into the said bushing and provided with an air-passage communicating with the said channel 7, a flat ring-valve in the lower channel in said plug to close passage *a*, and the liquid-controlling valve G within said plug, substantially as described.

Witness my hand to the foregoing specification this 30th day of August, 1897.

GEORGE J. HABERMANN.

Witnesses:

H. T. FISHER,  
R. B. MOSER.