

No. 754,618.

PATENTED MAR. 15, 1904.

N. A. SMITH & C. H. PELTON.

TAPPING DEVICE.

APPLICATION FILED JUNE 1, 1903.

NO MODEL.

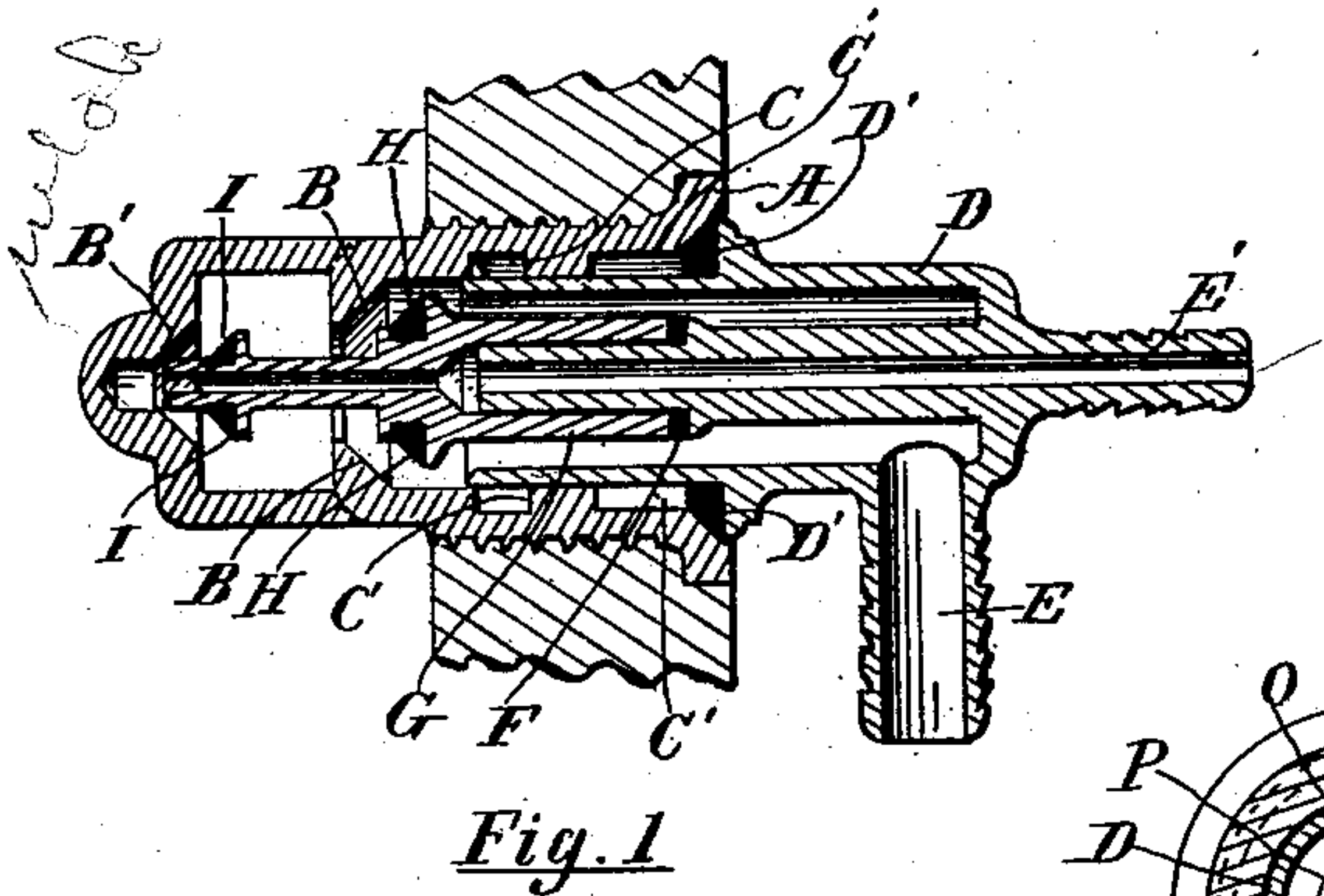


Fig. 1

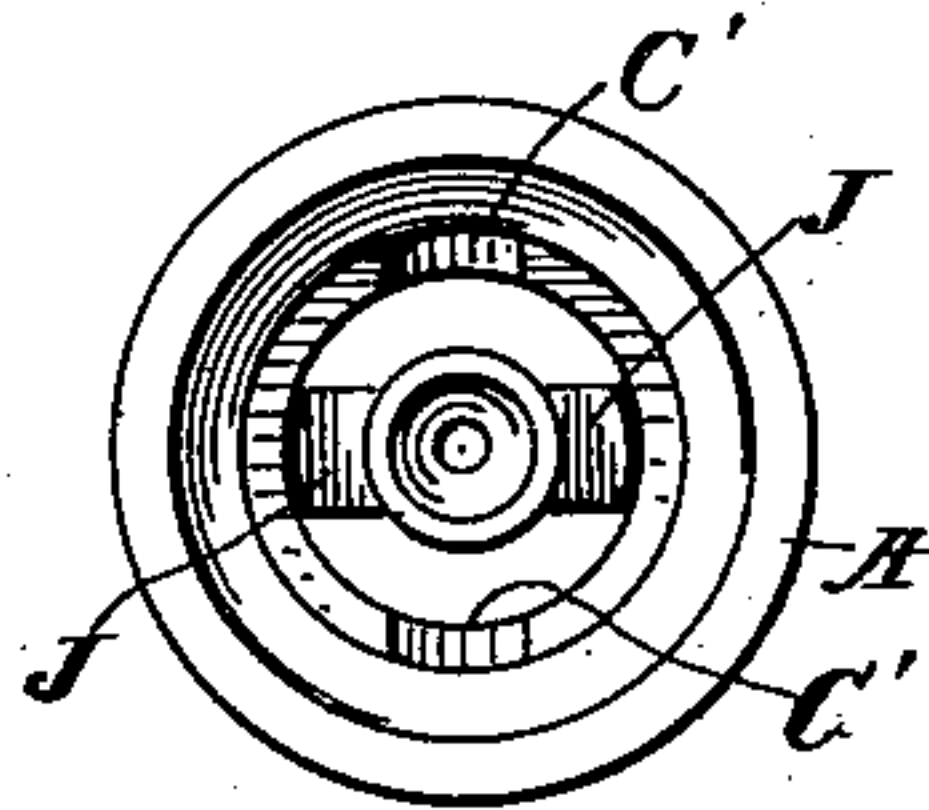


Fig. 3

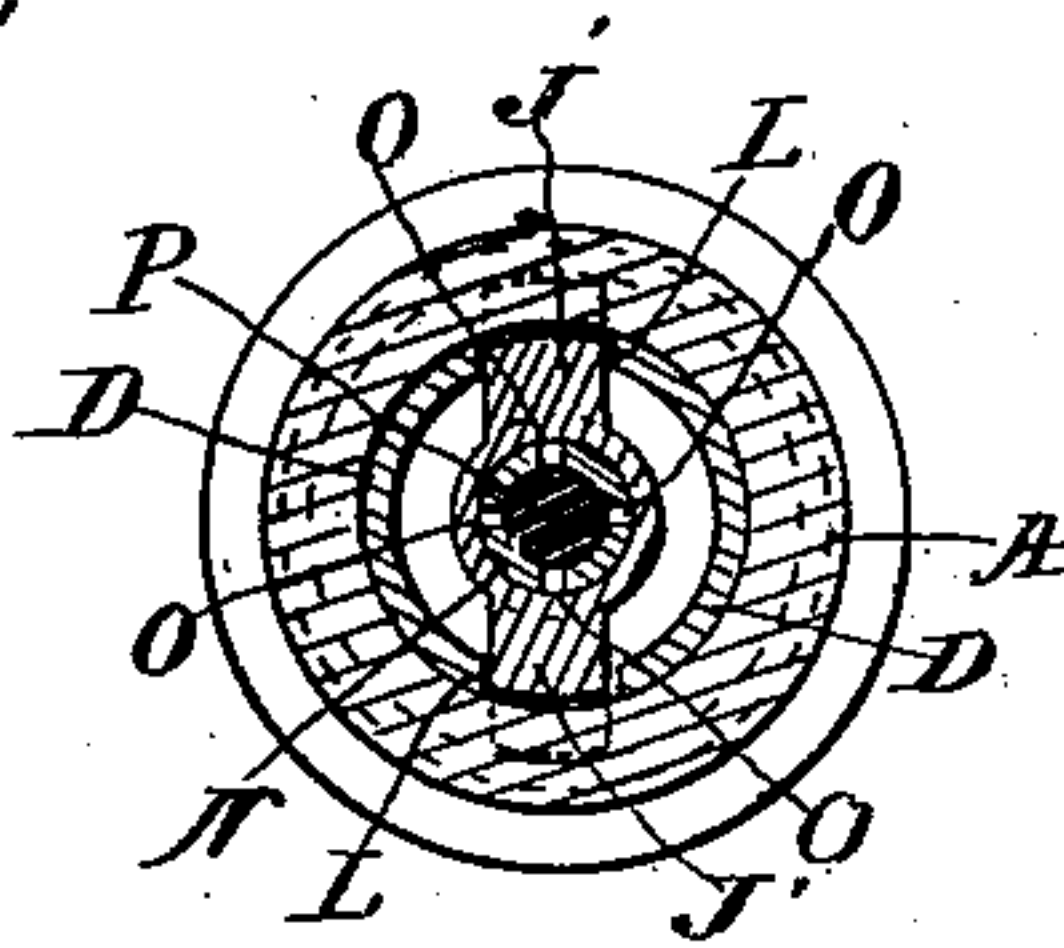


Fig. 9

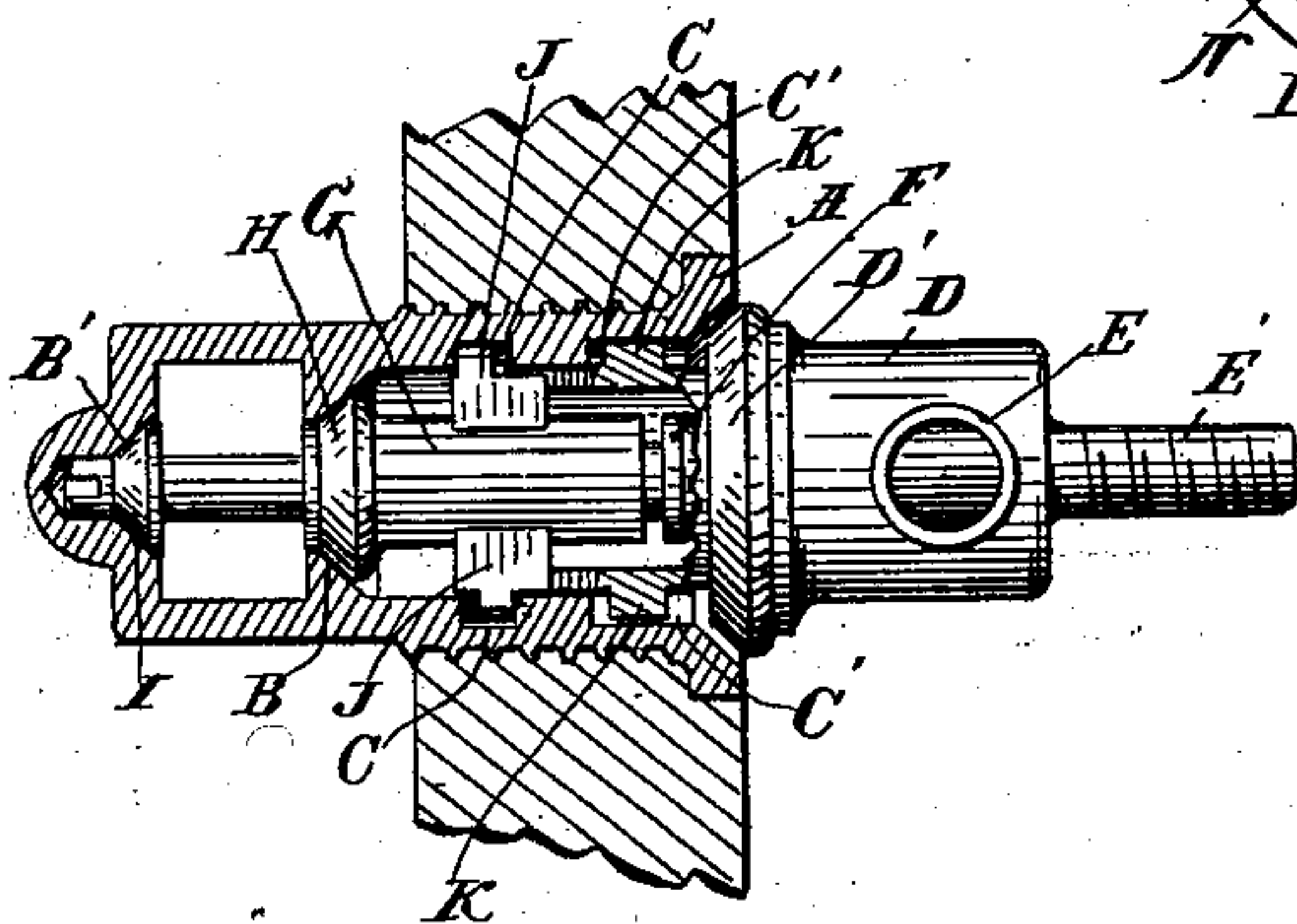


Fig. 2

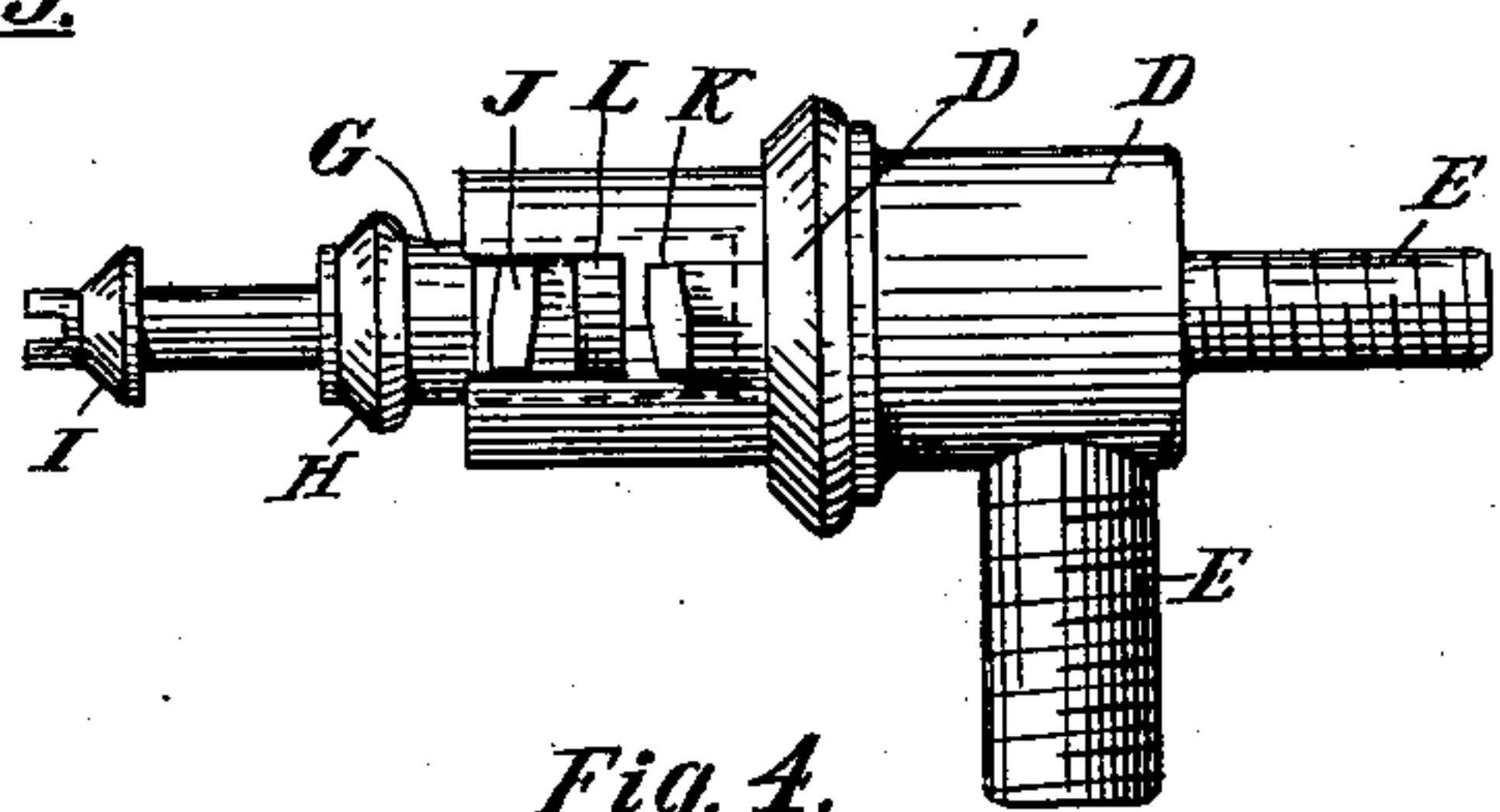


Fig. 4

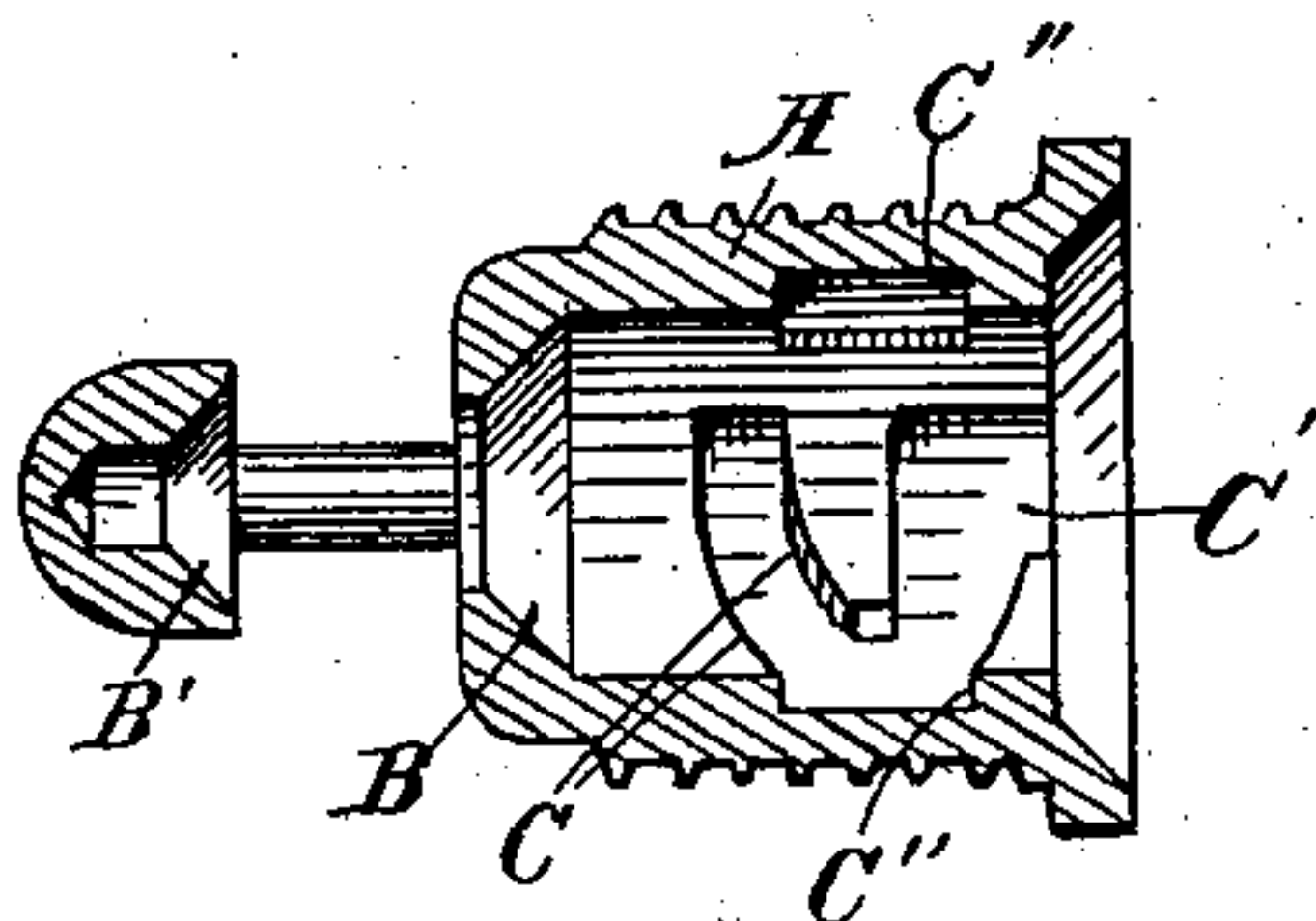


Fig. 5

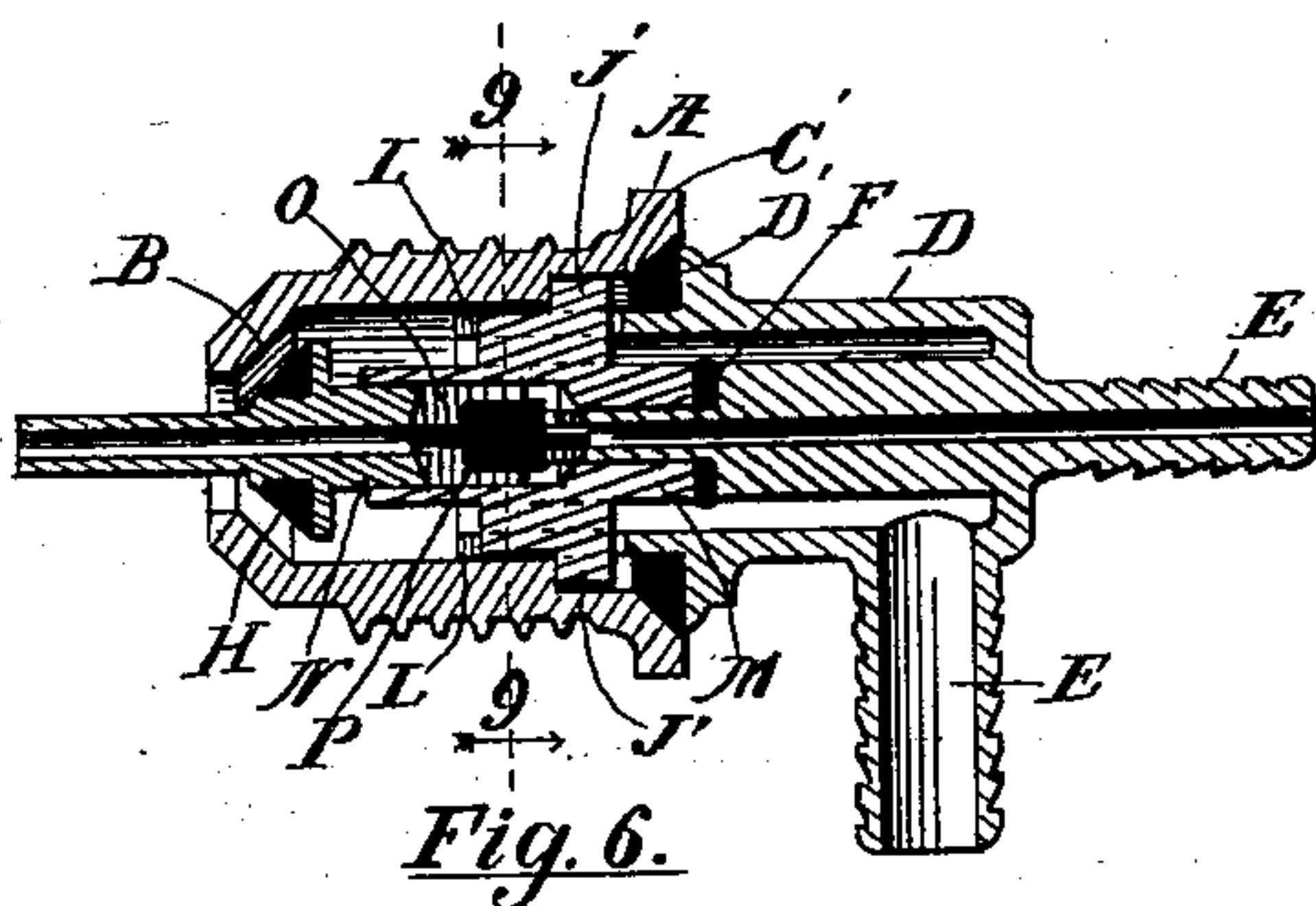
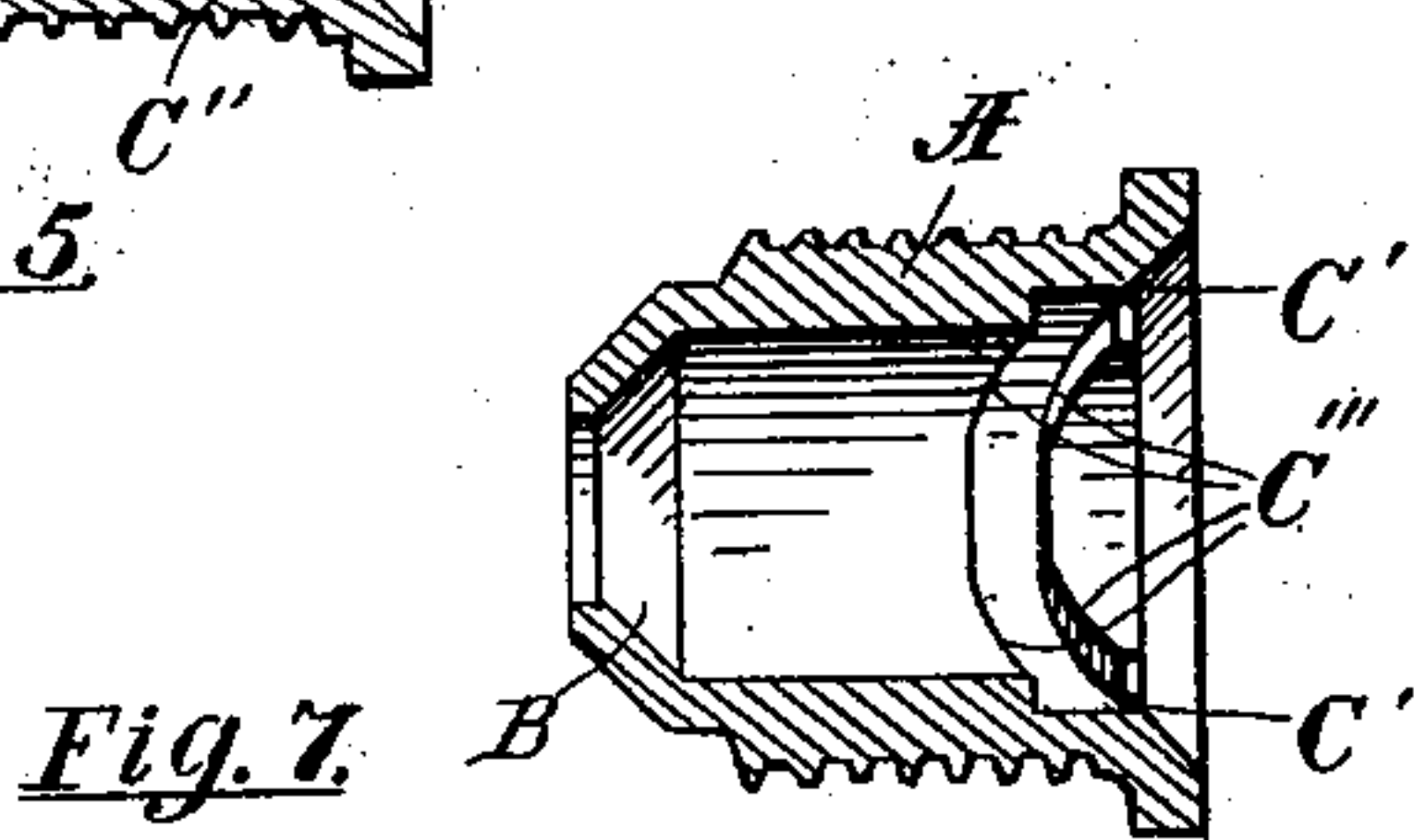


Fig. 6



UNITED STATES PATENT OFFICE.

NICHOLAS A. SMITH AND CHARLES H. PELTON, OF GRAND RAPIDS,
MICHIGAN.

TAPPING DEVICE.

SPECIFICATION forming part of Letters Patent No. 754,618, dated March 15, 1904.

Application filed June 1, 1903. Serial No. 159,457. (No model.)

To all whom it may concern:

Be it known that we, NICHOLAS A. SMITH and CHARLES H. PELTON, citizens of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Tapping Devices; and we do hereby 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.

Our invention relates to improvements in tapping devices for liquid-receptacles, and more particularly for tapping beer-kegs and other vessels containing beverages; and its object is to provide a simple device adapted to draw the fluid from the vessel and at the same time to admit another fluid to the vessel, to provide means for securely closing the opening during transportation or storage, to provide for readily attaching and detaching the device for dispensing the fluid, and to provide the device with various new and useful features, hereinafter more fully described, and particularly pointed out in the claims.

Our device consists, essentially, of a suitable bushing adapted to be inserted in the wall of the keg, cask, or other containing vessel and having suitable valve-seats and cam-surfaces, a closure adapted to engage the valve-seats and having lugs to engage the cam-surfaces, and a detachable dispensing-tube to connect with the valve-closure and provided with suitable lugs to engage the cam-surface and adapted to engage and operate the valve-closure, whereby the same may be opened by the insertion of the said tube in the bushing, as hereinafter more fully described, reference being had to the accompanying drawings, in which—

Figure 1 is a central longitudinal section of a device embodying our invention as it appears when adjusted for use; Fig. 2, the same as it appears when closed with the detachable parts in position for removal; Fig. 3, an end elevation of the bushing and valve-closure as it appears when the dispensing-tube is removed; Fig. 4, a detail in side elevation of

the valve-closure and dispensing-tube; Fig. 5, a detail of the bushing, showing a section at right angles to Fig. 2; Fig. 6, a detail in longitudinal section of a modified form of our device shown in open position; Fig. 7, a longitudinal section of the modified bushing; Fig. 8, a detail showing the modified structure in closed position and with the dispensing-tube removed; Fig. 9, a transverse section of the modified structure taken on the line 9 9 of Fig. 6.

Like letters refer to like parts in all of the figures.

A represents a suitable bushing, preferably externally screw-threaded and adapted to be inserted in any keg, cask, or other vessel for containing a liquid and provided with an opening and valve-seat B at its inner end and a second and smaller valve-seat B' supported at a distance from the bushing and within the vessel. The bushing is also provided on its interior with cam-surfaces, as indicated at C and C'' in Fig. 5 or as at C''' in Fig. 7, to engage suitable lugs on the valve-closure and dispensing-tube, as hereinafter described.

D is a detachable dispensing-tube adapted to be attached for use with its inner end inserted in the bushing and the other end projecting outward therefrom and provided with a branch tube E, to which may be attached any suitable hose or tube to receive the liquid drawn from the vessel. The dispensing-tube D is provided with a suitable packing-ring D' to engage the bushing and form a tight joint between the tube and bushing. Said tube is also provided with lugs K to engage the cam-surfaces C'' and securely hold the same in position within the bushing. In the axis of the tube D is a small inlet-tube E', and extended outward for attachment of any suitable hose or other means whereby air or other fluid is admitted to the vessel to take the place of the discharged liquid. This fluid may be forced in under pressure by any suitable means, if desired.

The valve-closure consists of a suitable tube arranged in line with the intake-tube E and constituting a prolongation of the same and

having its outer end adapted to telescope over the reduced inner end of the tube E. F is a suitable packing-ring to form a tight joint between the same. On the closure-tube G is
 5 a suitable packing H, projecting outward therefrom to engage the seat B and close the outlet-opening of the bushing. The inner end of this closure-tube G is reduced in diameter and extends through said opening and is provided near its outer end with suitable packing
 10 I to engage the seats B', and thus close the intake-tube. The closure G is also provided with lugs J, adapted to engage the cam-surface C in the bushing, and thus move the closure
 15 longitudinally to close and open the intake and exit openings and engage the packing F, as hereinafter described.

The closure-tube G is inserted in place by any suitable tool having a tubular bifurcated
 20 end similar to the inner end of the dispensing-tube D, whereby the tube G is turned to closed position, as shown in Fig. 2, with the lugs J engaging the cam-groove C and firmly holding the packings H and I against the seats B
 25 and B', and thus effectually closing both exit and intake openings.

The dispensing-tube when applied for use is inserted, as shown in Fig. 2, and the lugs K engaged with the cam-surfaces C' by rotating the said tube, the bifurcated end of which engages the lugs J on the closure-tube and turns the same in the cam-grooves C, and thus retracts the closure-tube to the position shown in Fig. 1, and at the same time the
 35 cam-surfaces C' engage the lugs K and force the packing D' against the seat in the outer end of the bushing and securely hold the dispensing-tube in place. This movement also forces the outer end of the closure-tube G
 40 against the packing-ring F, and thus forms a continuous closed passage for the intake E'. The dispensing-tube D has an interior diameter greater than the outside diameter of the intake-tube E' and closure G, and thus an annular passage is formed for the outflowing liquid, and the intake-tube E' extends within the vessel and discharges the incoming air or other fluid within the same.

From the foregoing description the further
 50 operation of the device will be readily understood.

In the modification shown in Figs. 6, 7, 8, and 9 a more compact structure is formed and the closure of the intake is within the same
 55 instead of at its end. The bushing A is provided with the same seat B and has a cam-groove, as shown at C'', with entrance-openings C' at opposite sides, and from thence curving downward at each side of the bushing. The dispensing-tube D is made shorter on the inner end and bifurcated at right angles to the lugs K; otherwise it is substantially the same as in the other construction. A middle
 60 section M is provided for the intake having lugs J' in substantially the same transverse

plane as the lugs K on the dispensing-tube. This middle section telescopes outside of the closure-tube, which latter is modified by having a plug P of suitable elastic material inserted in its outer end and grooves O on each
 70 side of the plug to permit passage of the inflowing fluid. This plug engages a seat surrounding the opening for the end of the tube E' and closes the same when the valves are closed, and when the valves are opened the end
 75 of the tube E' engages this plug and pushes it away from the seat in the middle section, and thus opens a passage around the plug for the incoming air, the inner end of the tube E' being transversely slotted to complete this
 80 passage. The operation of this modified structure is otherwise substantially the same as the first-described device and needs no further explanation.

Having thus fully described our invention, 85 what we claim, and desire to secure by Letters Patent, is—

1. The combination of a bushing having a valve-seat at its inner end, a smaller valve-seat, a yoke supporting said valve-seat, a tubular
 90 and longitudinally-movable valve engaging the said valve-seats and closed by the smaller valve-seat, and a dispensing-tube adapted to be attached to the bushing and to operate the valve and having an exit-passage connected
 95 to the interior of the bushing and an air-inlet passage connected to the interior of the valve.

2. The combination of a bushing, cams in the interior of the bushing, a valve to close the bushing, lugs on the valve to engage the
 100 cams, a dispensing-tube adapted to engage and rotate the valve, lugs on the tube to engage the cams, and a packing on the tube to engage the bushing.

3. The combination of a bushing having internal cams, a valve having a central opening, lugs on the valve to engage the cams, a second valve to close said opening, a dispensing-tube adapted to open said valves, a packing on the tube to engage the bushing, lugs on the said
 110 tubes to engage the cams, and an intake-tube in the dispensing-tube and connected to the opening in the valve.

4. The combination of a bushing having two aligned valve-seats, a valve engaging the seats
 115 and having an axial opening, cams in the interior of the bushing, lugs on the valve engaging said cams, a dispensing-tube having a bifurcated end adapted to engage the lugs on the valve, lugs on the tube to engage the cams
 120 in the bushing, a packing on the tube to engage the bushing, and an intake-tube in the dispensing-tube and connecting with the opening in the valve.

5. The combination of a bushing having two aligned valve-seats, oppositely-inclined cams in the interior of the bushing, a double valve engaging both valve-seats and having an axial opening, lugs on the valve and engaging the
 125 cams having one inclination, a dispensing- 130

5 tube having a bifurcated end to engage the
lugs on the valve, lugs on the dispensing-tube
to engage the oppositely-inclined cams, an in-
take-tube in the axis of the dispensing-tube
and having a reduced end to insert in the open-
ing of the valve, and a packing on the intake-
tube.

In testimony whereof we affix our signatures
in presence of two witnesses.

NICHOLAS A. SMITH.
CHARLES H. PELTON.

Witnesses:

LUTHER V. MOULTON,
GEORGIANA CHACE.