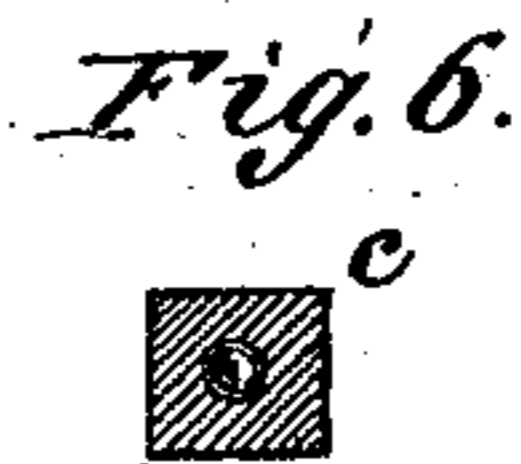
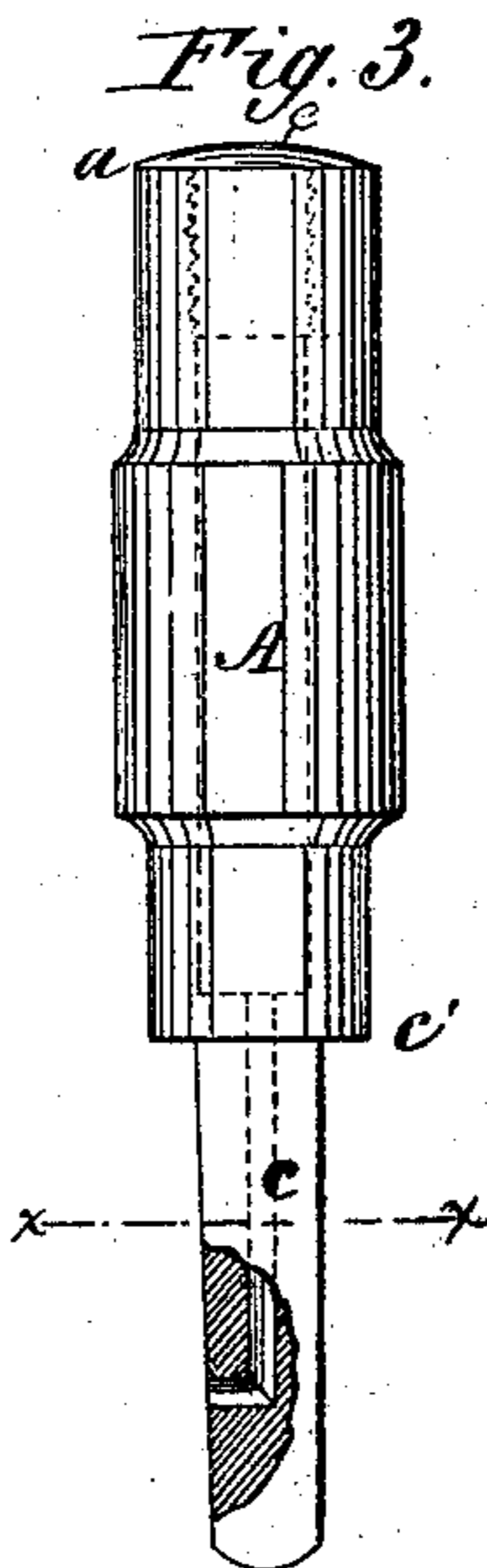
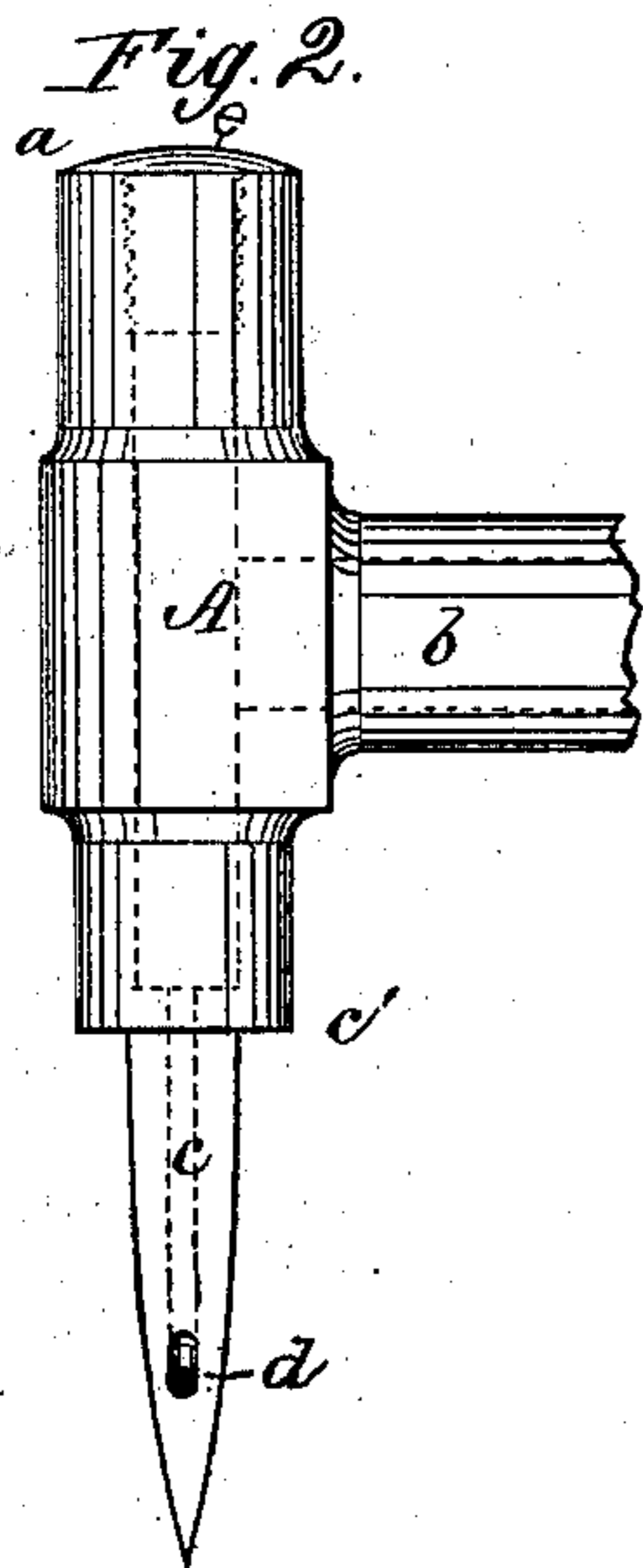
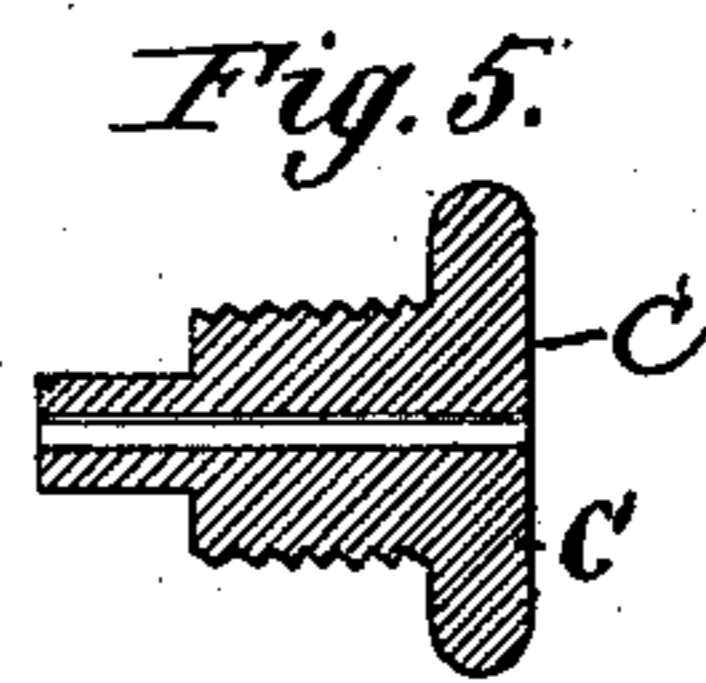
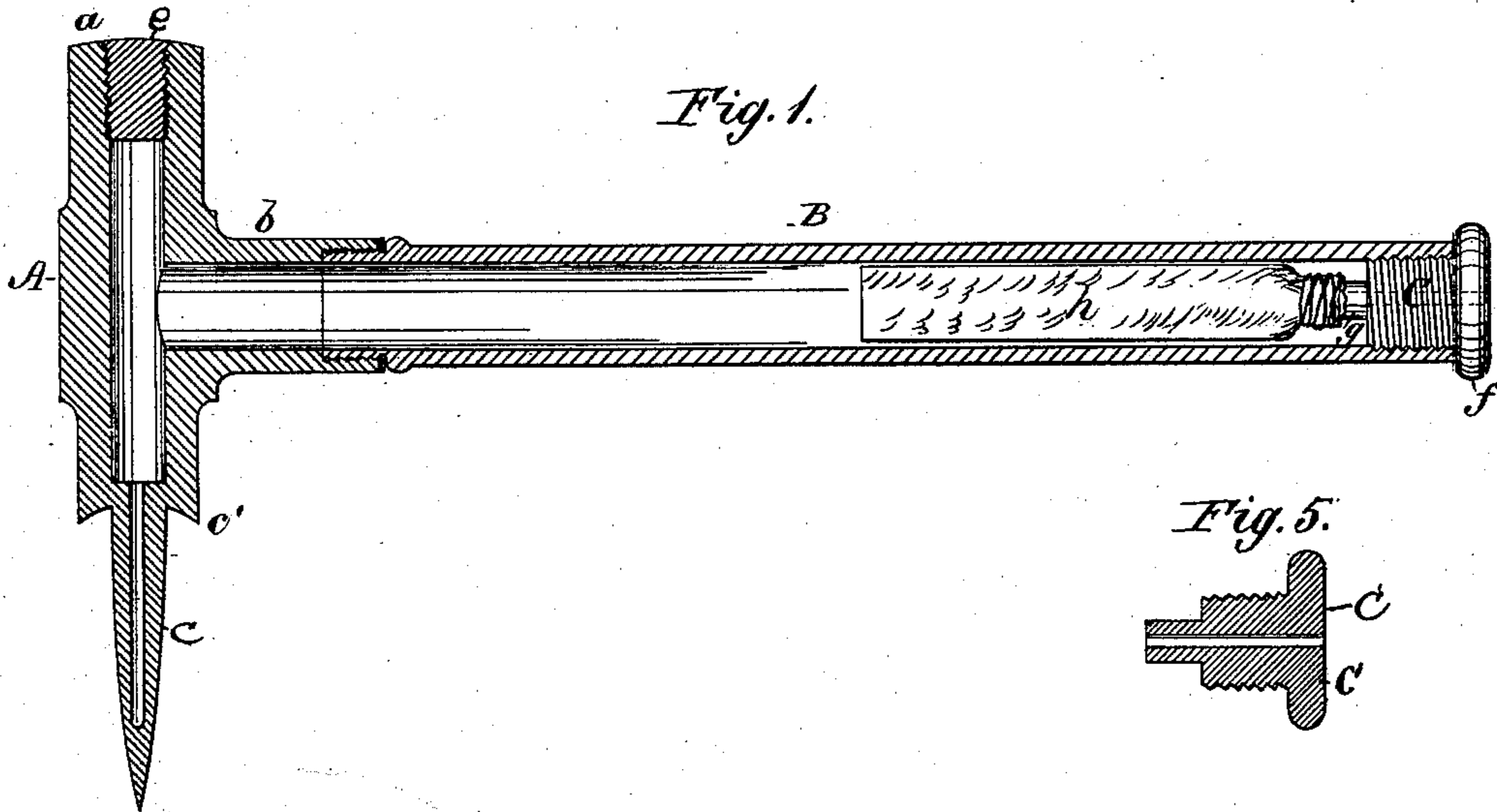


P. NUSSBAUMER.

Vent Spike and Valve for Beer Barrels.

No. 209,504.

Patented Oct. 29, 1878.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN VENT SPIKES AND VALVES FOR BEER-BARRELS.

Specification forming part of Letters Patent No. **209,504**, dated October 29, 1878; application filed March 28, 1878.

### *To all whom it may concern:*

Be it known that I, PETER NUSSBAUMER, of the city and county of St. Louis, and State of Missouri, have invented a new and Improved Vent Spike and Valve for Beer-Barrels, &c.; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a longitudinal section; Fig. 2, a side view of the head and spike; Fig. 3, an end view taken at right angles to Fig. 2, showing a portion of the spike broken away; Fig. 4, a detail end view of the flexible valve-hose; Fig. 5, a sectional detail view of the plug; Fig. 6, a cross-section of the spike through line *xx* of Fig. 3.

The object of my invention is to provide an improved device for piercing the bungs of beer-barrels, &c., for the purpose of admitting air to the interior, to allow the liquid to be drawn off at the faucet when the pressure of the gas in the barrel is not sufficient to cause the liquid to flow.

To this end the invention consists in a hollow metallic hammer-shaped head, extended upon one side in the form of a chambered rectangular spike, tapered to a chisel-edge. This spike has a lateral opening upon one side, and the head has attached thereto, at right angles, a tubular handle, which carries at its extremity an inwardly-opening valve, so that when the spike is driven into the bung of the barrel until the opening in the same communicates with the interior of the barrel air can pass through the inwardly-opening valve in the handle, down the hollow head, and through the chambered spike into the barrel, the said valve being so arranged as to prevent any air or gases in the barrel from passing out, as hereinafter more fully described.

The invention also consists in other details of construction.

In the drawing, A represents the head, which is made of brass, iron, or other suitable material, and formed by forging or casting, with a face portion, *a*, and arm *b*, at right angles, to connect with the handle. Upon the opposite side of the head from the face the head is extended in the shape of a rectangular spike, *c*,

tapered to a chisel-edge, which spike is formed by turning off this portion of the head tapering, and filing down square to leave a shoulder, *c'*, between the spike and the head, which shoulder is undercut, for the purpose hereinafter described. Both the head A and its arm *b* are chambered or made hollow, and the chamber thus formed is extended longitudinally into the spike to a hole, *d*, formed in the wedge-shaped side of the spike.

The chamber in the head and the arm *b* may be cast; but in practice I forge the same for greater strength, and first drill out the head from the side *a*, and then, with a smaller drill, extend this chamber down into the spike. The opened end *a* is then screw-threaded internally, and a solid plug, *e*, inserted to permanently close the end and form a face. The arm *b*, which is also drilled to communicate with the chamber in the head, is then screw-threaded and fitted by means of a tight joint to a tubular metal handle, B. In the rear end or extremity of the handle is fitted a plug, C, having a milled disk, *f*, and a screw-threaded portion, which fits tightly, by means of packing, into a corresponding screw-thread in the end of the handle. This plug is provided with a central perforation extending entirely through the same and through a nipple, *g*, formed upon the end thereof, to which nipple a flat pliable rubber hose, *h*, is securely attached. This hose is normally in a flat or collapsed state, and is so arranged that, while it permits air to pass inwardly to the handle, any pressure of gas or air from the inside causes it to collapse and close still more tightly, so as to form a perfect check-valve.

In making use of the invention, as thus described, the chisel-shaped edge of the spike is arranged transversely to or across the grain of the wood, and the spike then driven through the bung by the blows of a mallet upon the face of the head. Just here it may be remarked that a peculiar advantage is secured by the rectangularly-shaped and chisel-pointed spike. In entering the bung it cuts across the grain of the soft wood, and as it passes in, being tapered upon two sides only, it simply crowds back the wood in the direction of its grain without producing any transverse wedging action at right angles to the grain. There

being no cleavage of the grain in the insertion of the spike, then it follows that there are no splits or cracks upon the side of the spike, and the carbonic-acid gas cannot pass out, no matter what its pressure may be. In still further securing a tight joint at the point of the piercing and between the wood and the spike, the undercut edge of the shoulder *c'* of the head, after the spike is driven in, presses upon the soft wood and crowds it against the spike, and also buries itself in a circular trough which it forms in the wood.

In forming the hole *d* in the side of the spike its upper edge is beveled or tapered off inclinedly, so that the wood pressing into the hole will not hang therein, but will pass over the hole and leave it clear and unobstructed. After the spike has been driven in until the hole *d* communicates with the interior of the barrel, whenever the gas pressure in the barrel becomes so reduced that the liquid will not flow at the faucet, air passes inwardly through the valve and handle and down the hollow head *A* into the barrel through the opening in the spike, thus allowing the liquid to pass out freely from its own gravity.

The device, although designed principally to operate to admit the air to the barrel or keg when the pressure is reduced, is preferably inserted at the same time when the said barrel or keg is first tapped, for the reason that the check-valve in the handle will not allow any gas to pass out, even when under heavy pressure, and the device is always in position when its action is required.

In defining my invention more clearly, I am aware that a check-valve made of a flexible or collapsible hose is not new as applied to a beer-barrel vent; and I do not claim it except when combined with the tubular portion of a vent-spike and constructed of two flat pieces, *k k*, of flexible material, joined at their edges, so as to have their adjacent sides normally in contact throughout their length. This makes the hose, when collapsed, of equal width throughout the length, so as to conform the better to the shape of the tubular section in which it is placed; and when the end becomes relaxed and weakened from frequent vibration the valve does not become defective, but the por-

tions of its sides above the end being normally flat and adjacent to each other operate to prevent the outflow of the gas.

I am also aware that a round, tapering, and tubular spike has been heretofore employed for a like purpose as my invention; but as the wedging action is in that case produced all around, it is impossible to avoid the exertion of a transverse cleavage to the grain of the wood, and as the bung is inevitably split the carbonic-acid gas escapes. With my form of spike, having a rectangular shape in transverse direction and a chisel-edge instead of a point the cleavage is exerted only in the direction of the length of the grain, and the splitting of the bung is avoided.

Having thus described my invention, what I claim as new is—

1. The venting device consisting of a head carrying a spike and a handle extending laterally from the head, there being longitudinally through the three parts a continuous passage which communicates with an inwardly-opening valve attached to the handle and with an orifice through the side of the spike, as and for the purpose set forth.

2. A chambered vent-spike made with a chisel-edge, and of rectangular shape in cross-section, and provided with an opening upon its side near the said chisel-edge, combined with an inwardly-opening valve, as and for the purpose described.

3. The spike having an opening, *d*, with its side farthest from the cutting-edge beveled or cut away to render it self-closing, as described.

4. The combination, with the tubular portion of a spike-vent, of a collapsible valve, made of two flat pieces of flexible material fastened at their edges, so that the faces of said pieces shall be normally in contact at any portion of their length, substantially as described.

The above specification of my invention signed by me this 23d day of March, 1878.

PETER NUSSBAUMER.

Witnesses:

EDWD. W. BYRN,  
 SOLON C. KEMON.