

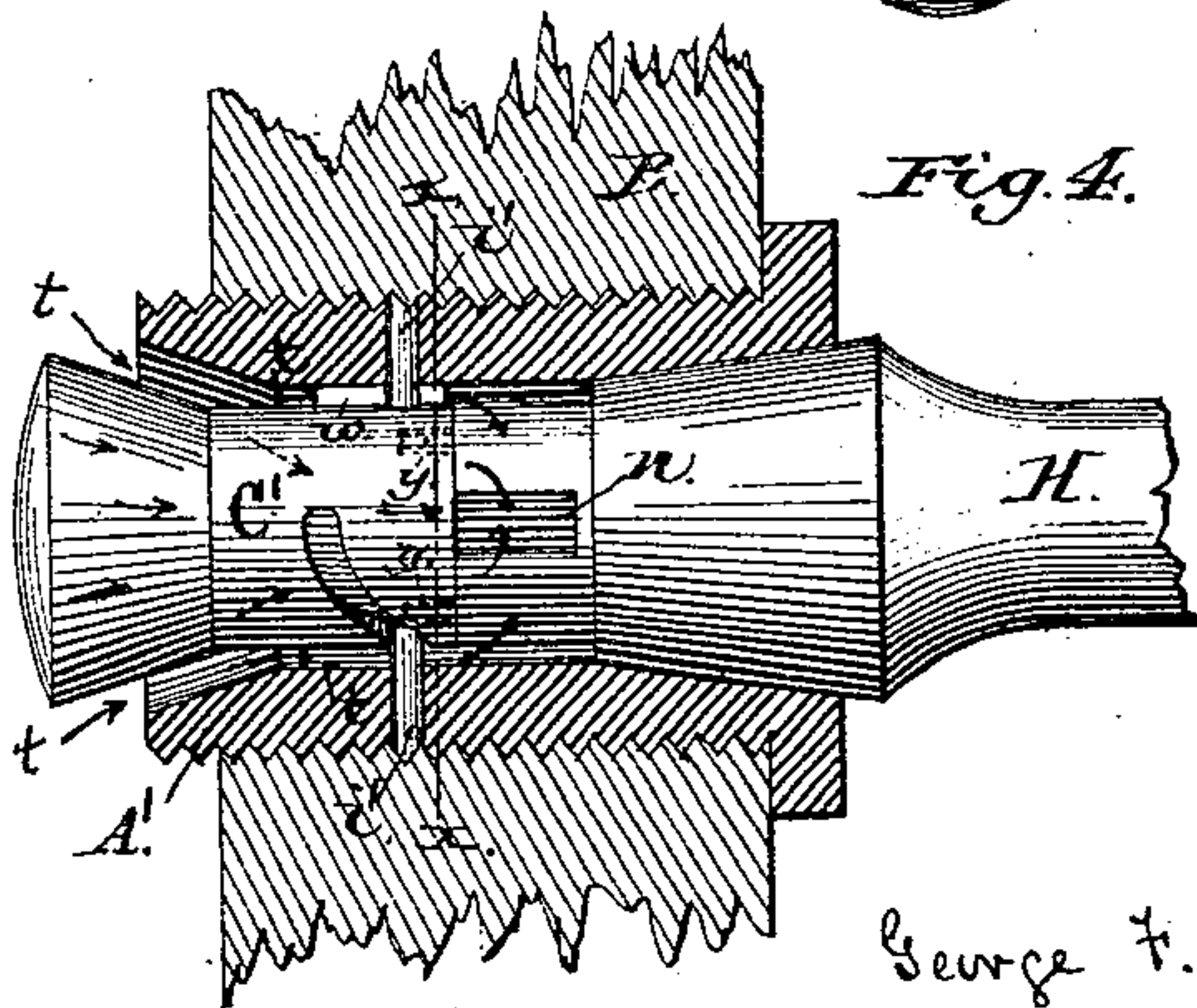
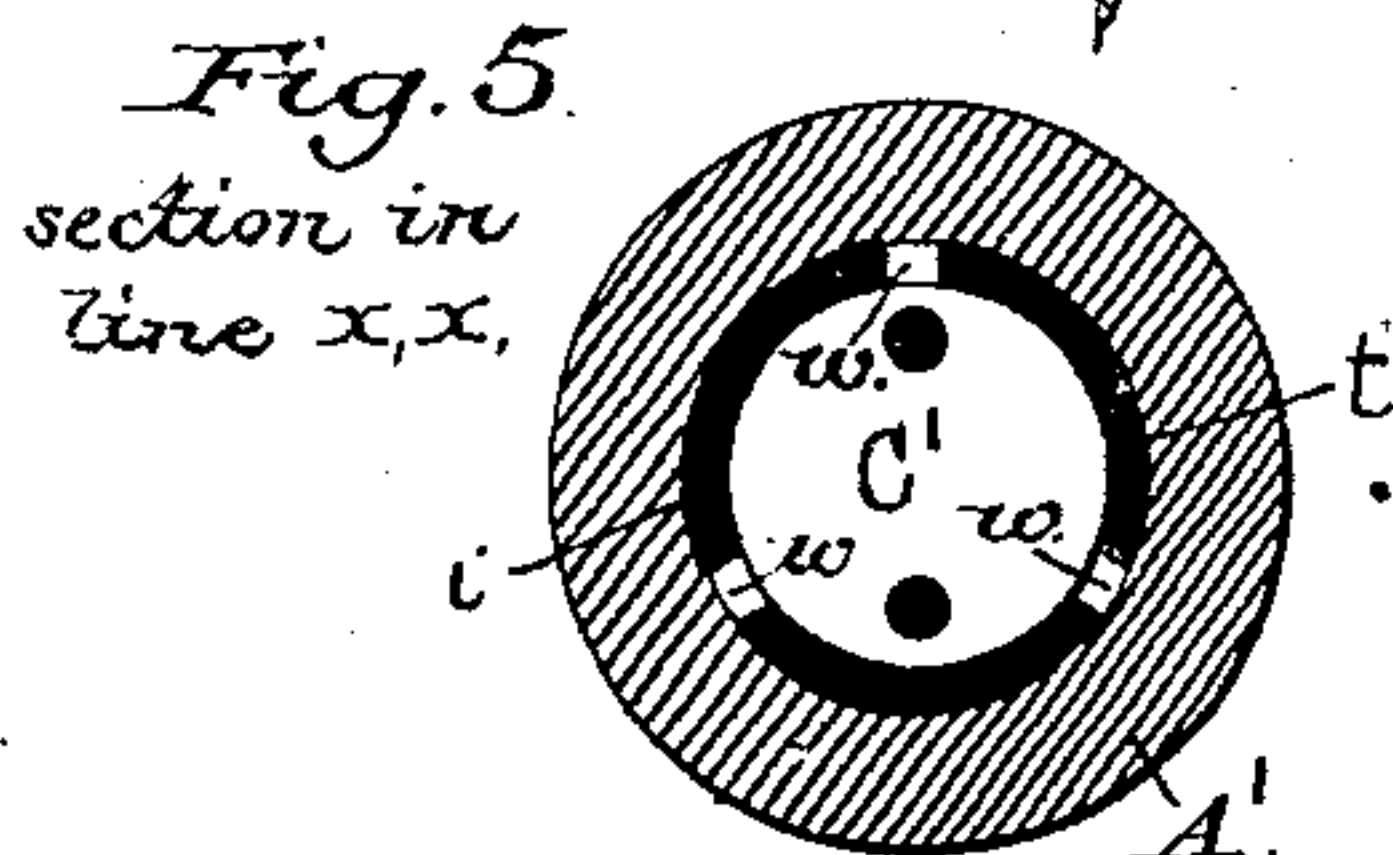
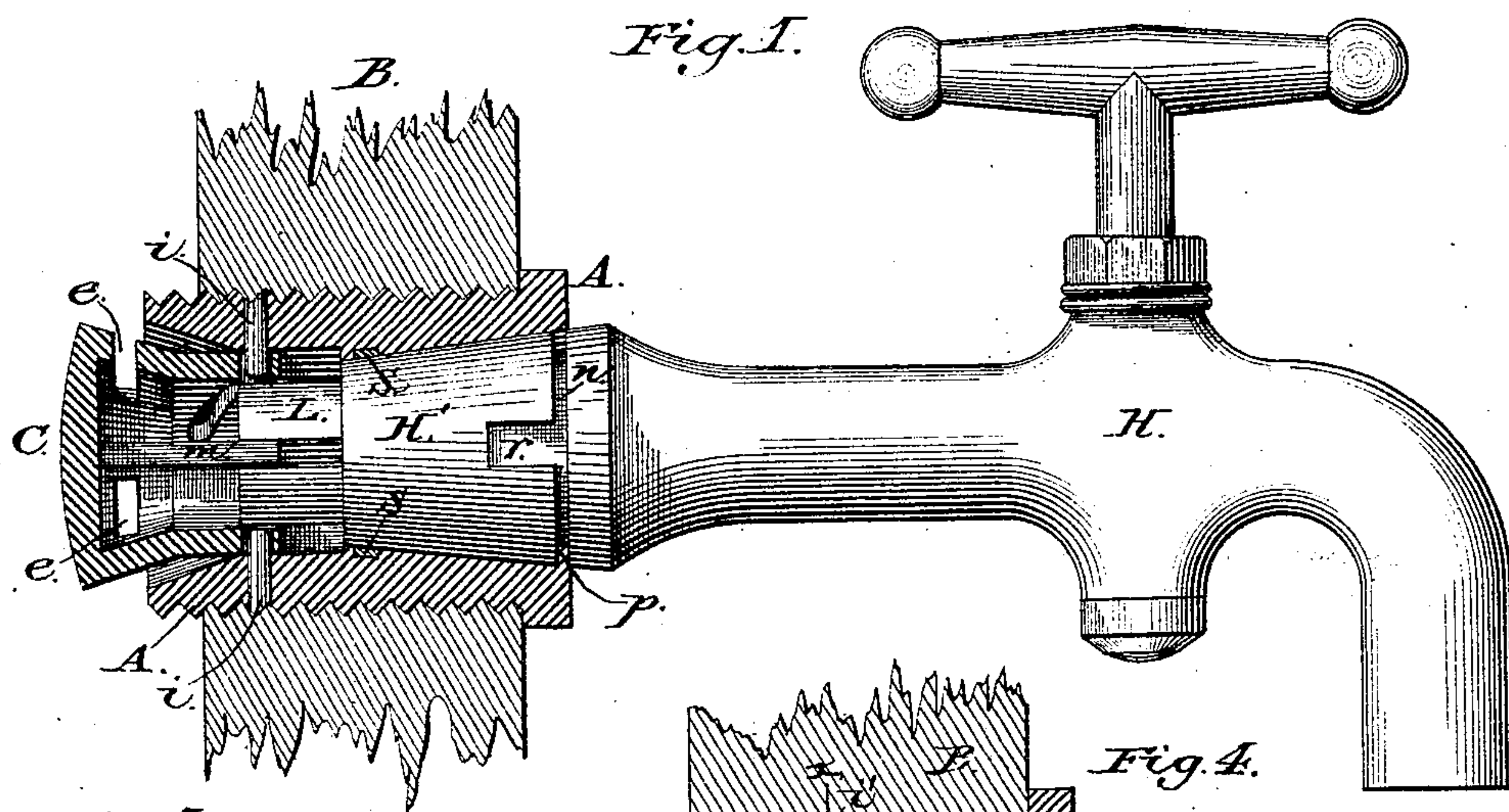
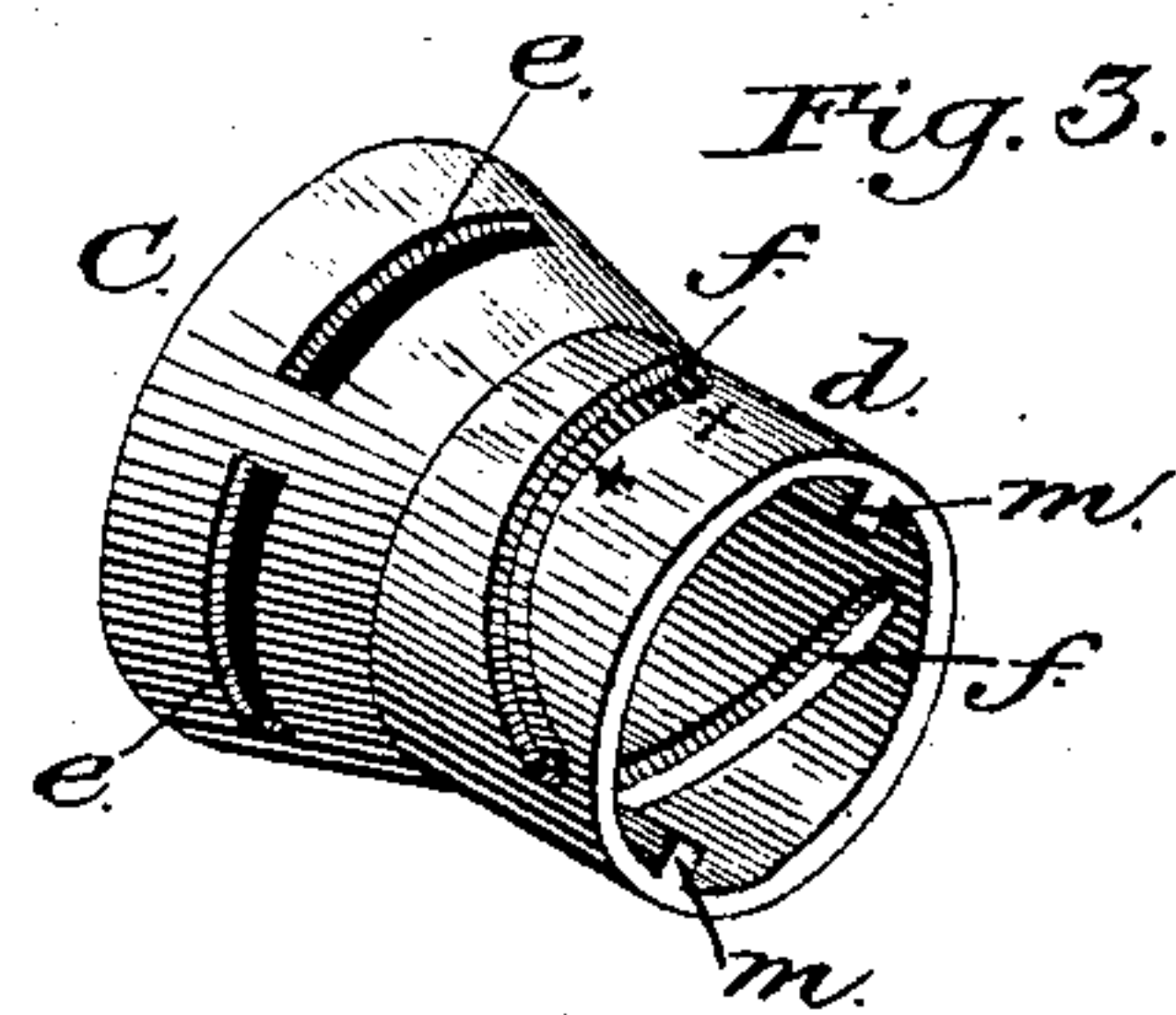
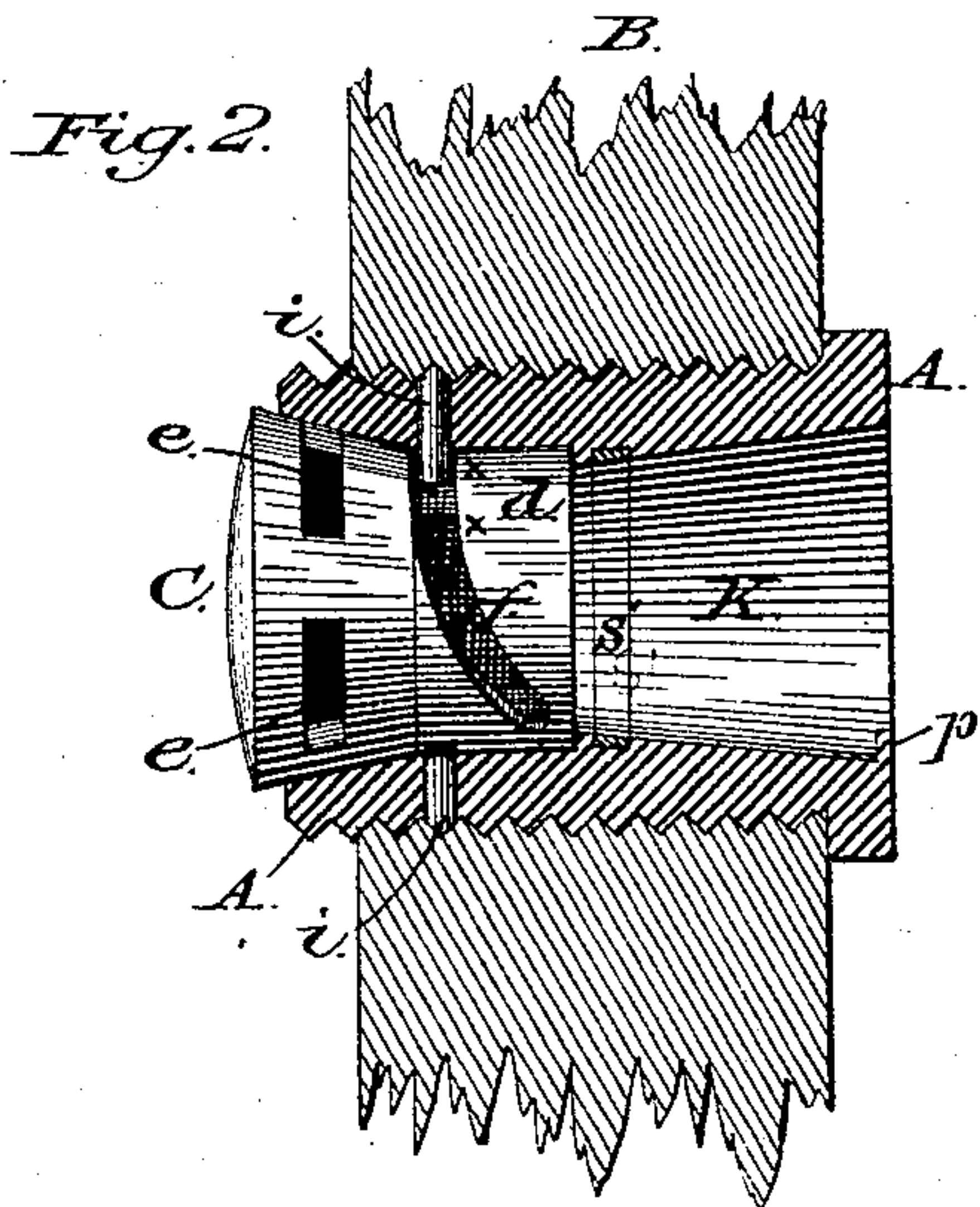
(No Model.)

G. F. HILDENBRAND, W. KLEIN, & C. TRÜMPER.

LOCKED BUNG.

No. 284,848.

Patented Sept. 11, 1883.



Witnesses:

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UNITED STATES PATENT OFFICE.

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LOCKED BUNG.

SPECIFICATION forming part of Letters Patent No. 284,848, dated September 11, 1883.

Application filed April 16, 1883. (No model.)

To all whom it may concern:

Be it known that we, GEORGE F. HILDENBRAND, WILHELM KLEIN, and CHARLES TRUMPER, of the city, county, and State of New York, have invented a new and useful Improvement in Locked Bungs for Barrels, &c.; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

Our invention relates to a non-detachable bung for casks, barrels, and tanks. Its object is to supply a bung in connection with a bush or collar permanently secured in the barrel, which shall operate as a valve to automatically close and lock the tap-hole when the faucet is withdrawn, and which may be readily unlocked and opened by the insertion of a faucet adapted thereto, without, however, being detached thereby from its bush.

It consists in a hollow conical metallic plug fitted in a counterpart seat in the inner end of a metallic bush adapted to be firmly secured in the tap hole of the cask or barrel, the plug having valve-openings cut circumferentially through its conical outer end, and inclined slots through the cylindrical body thereof, to engage pins projecting thereinto from the inner periphery of the bush, the slots being inclined transversely to its axis at such a pitch as that when the plug is rotated in the bush the sliding contact of the slots with the pins shall operate either to force out or to draw in the plug, as the case may be, its outward movement being limited and its entire withdrawal prevented by the length of the slots. The plug is rotated by the engagement of the notches cut in the inner end of the faucet with lugs or projections upon the inner periphery of the hollow plug, the end of the faucet being made to pass into the plug, so that the faucet may itself serve as the key in unlocking or locking and opening or closing the bung.

In the accompanying drawings, Figure 1 is a central longitudinal section of the bung and bush when fixed in a barrel-head, the bung being illustrated as unlocked and opened by a faucet shown in elevation. Fig. 2 is a sectional view of the bung when closed and locked,

the faucet being withdrawn and the bung shown in elevation. Fig. 3 is a view in perspective of the hollow plug constituting the bung detached from its bush. Fig. 4 is a side view, partly in section, of a modification of our device, in which the reciprocating bung is made solid and supported upon guide-ribs, to allow a flow of liquid around the bung when open; and Fig. 5 is a transverse section on line *x x* of Fig. 4.

A is a metallic bush or collar, threaded exteriorly, and flanged at its outer end, to admit of being readily fitted to and secured in the tap-hole of a cask or barrel, B.

C is a hollow plug adapted to fit in the inner end of the bush to constitute its bung. The outer end of the plug is closed. Its outer periphery is made conical, tapering inward for a short distance from its outer end, and terminating in a cylindrical body, *d*. (See Figs. 2 and 3.) Openings or ports *e e* are formed circumferentially in the periphery of the conical portion of the plug, in line at a right angle to its axis, and slots *f f* are cut through its cylindrical portion *d* at an inclination to said axis, to provide cam-surfaces by which to obtain a reciprocating movement of the plug when it is rotated. A recess whose form and dimensions are an exact counterpart of the exterior of the plug C is formed within the inner end of the bush A, to receive the plug and form a seat for its conical portion. Pins *i i* are made to project inwardly in the cylindrical portion of the recess, to pass into and engage the inclined slots in the plug C. The diameter of the recess equals the largest diameter of the plug, while the inner diameter of the outer portion of the bush corresponds with or does not exceed that of the inner diameter of the plug, as shown in Figs. 1 and 2, so that a faucet entering the outer end of the bush will pass readily, without obstruction, into the cylindrical end of the plug.

Any form of faucet may be used with our improved lock-bung if fitted to enter the bush with a tight joint and to extend into the plug.

H in Fig. 1 represents a faucet whose inner end, H', is made tapering to fit into a tapering seat, K, Fig. 2, formed in the bush A, and is provided with a cylindrical extension, L,

adapted to project into the hollow bung. The faucet is made to serve as a key to open the bung by cutting a slot diametrically through the projecting cylindrical end L of the faucet, which is formed to project into the bung, and by fitting the latter with internal ribs or offsets, *m m*, to engage said slots; hence after inserting the faucet into the bush a turn thereof will operate to rotate the bung, its rotation serving by reason of the sliding contact of the cam-slots *ff* with the pins *i i* to force out and open the bung. The faucet is locked, when rotated so as to open the bung, by means of a catch-pin, *p*, adapted to project into a circumferential groove, *n*, in the outer periphery of the faucet, the pin being permitted to enter or leave the groove through a lateral slot, *r*, when the faucet is inserted into the bush in proper position to engage the offsets *m m*. The pin *p* thus serves as a guide in bringing the faucet into proper registry with these offsets, as well as a lock to prevent a withdrawal of the faucet when the bung is opened. The bung itself is prevented from accidentally rotating, and thus working open, when closed, by reason of the jarring and concussion to which the barrel or keg may be subjected, by producing the inner end of each cam-slot in a straight line at right angles to the axis of the bung, as shown at *xx* in Figs. 2 and 3, the straight slot serving as a lock upon the bung.

The joint of the faucet with the bush may be made tight by a packing-ring, *S*, of leather or its equivalent, inserted in a groove, *S'*, formed to receive it within the bush, as shown in Figs. 1 and 2.

A modification of the invention is illustrated in Fig. 4 and the sectional view, Fig. 5, of the

drawings. The plug or bung *C'* is in this case made solid, and is supported concentrically within the bush *A'* upon radial flanges or ribs *ww'*. (See Fig. 5.) It is rotated by means of pins *i' i'* upon the end of the faucet *H* fitting into sockets in the inner end of the bung. Slots *nn*, cut in the end of the faucet, permit the fluid to enter the same after passing through the channels *tt*, between the bung *C'* and the bush *A'*, when the bung is open.

We claim as our invention—

1. The combination, with a metallic bush, *A*, of a plug or bung, *C*, adapted to close the same, attached thereto and made to reciprocate therein when rotated, by means of a pin upon the one engaging an inclined groove or guide in the other, substantially in the manner and for the purpose herein set forth.

2. The combination, with the faucet *H*, bush *A*, and rotating reciprocating bung *C*, of a circumferential groove, *n*, in the neck of the faucet, a recess, *r*, leading into said groove, and a pin or lug, *p*, projecting from the bush, and adapted to enter the groove through said recess when the faucet is inserted into the bush, and to interlock therewith when the faucet is turned to rotate the bung, substantially in the manner and for the purpose herein set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

G. F. HILDENBRAND.
WILHELM KLEIN.
CHARLES TRUMPER.

Witnesses:

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