(No Model.)

H. C. BRADFORD.

PIPE TAP.

No. 397,167. Patented Feb. 5, 1889.

Fig. 1.

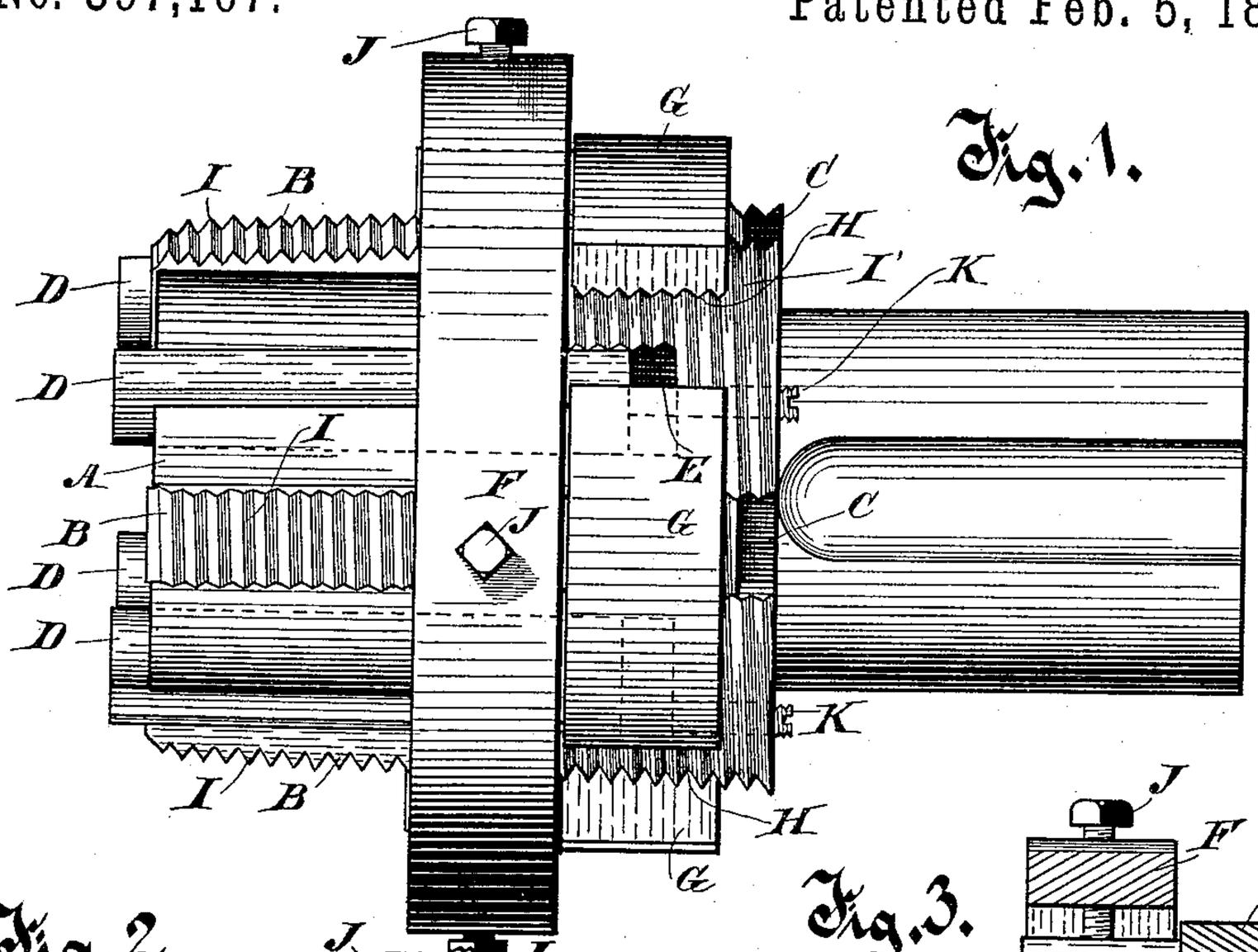


Fig. 2.

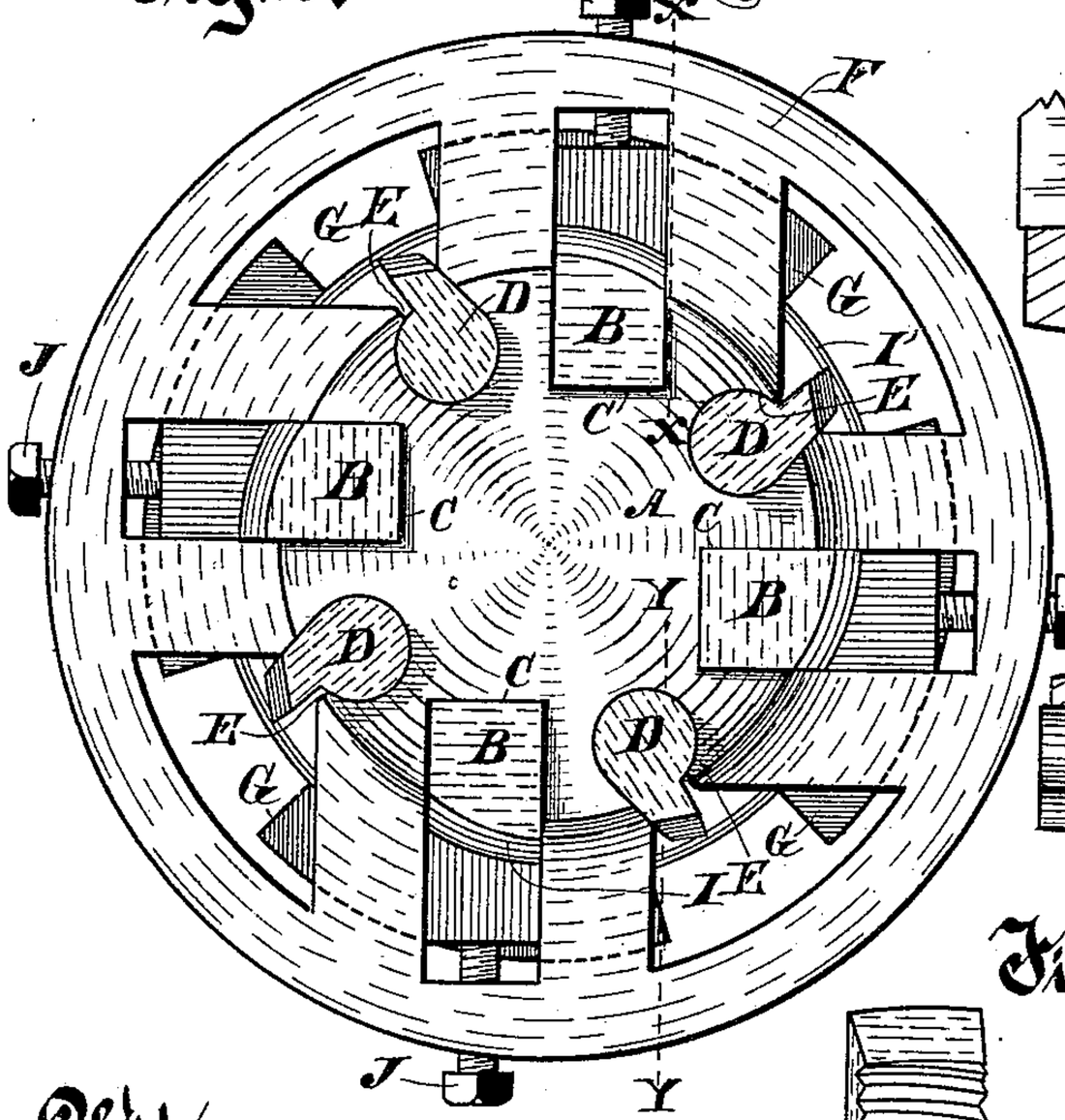


Fig. 3.

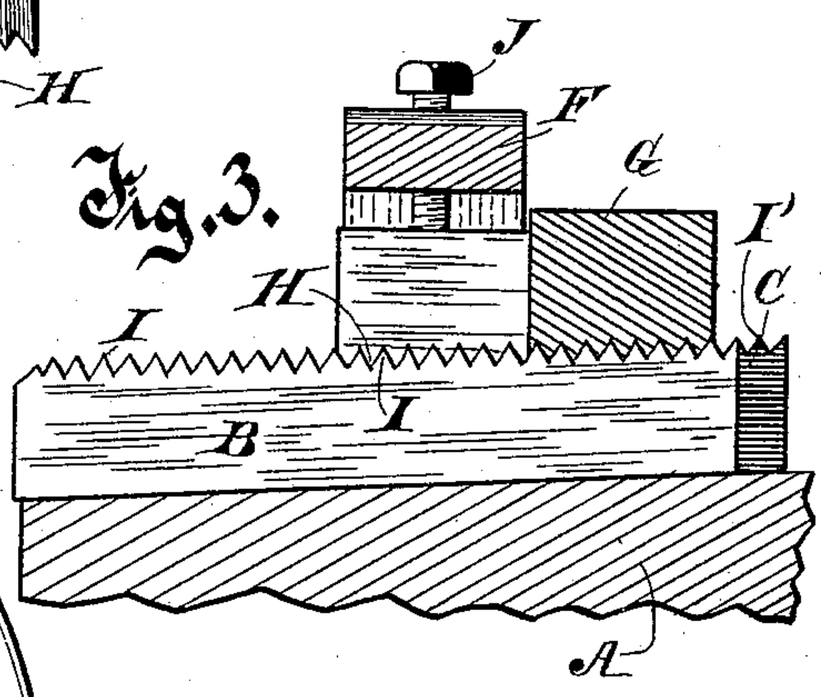


Fig. 4.

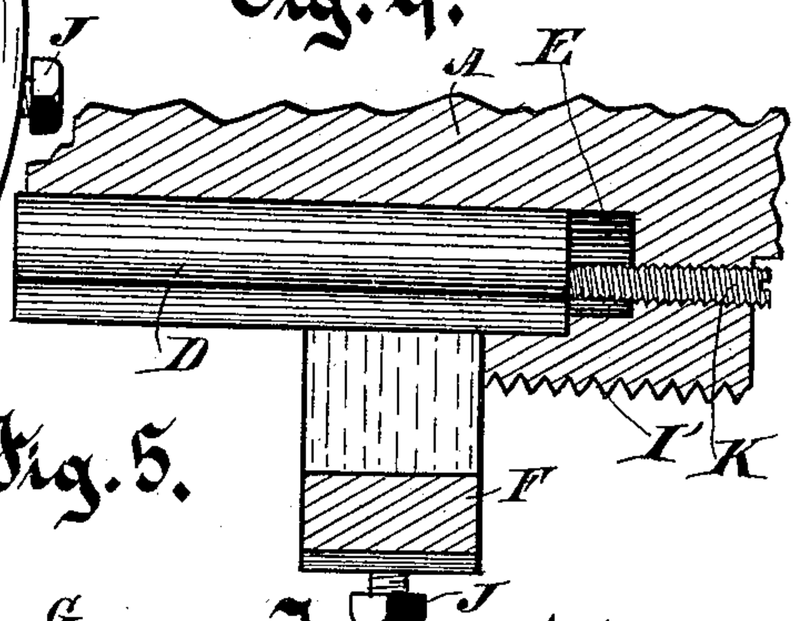
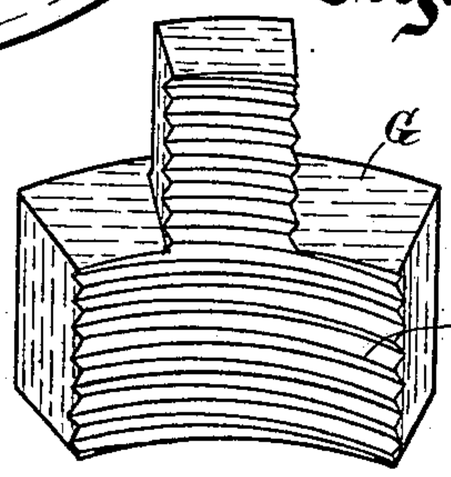


Fig. 5.



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UNITED STATES PATENT OFFICE.

HORACE C. BRADFORD, OF MILWAUKEE, WISCONSIN.

PIPE-TAP.

SPECIFICATION forming part of Letters Patent No. 397,167, dated February 5, 1889.

Application filed November 28, 1888. Serial No. 292,103. (No model.)

To all whom it may concern:

Be it known that I, HORACE C. BRADFORD, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Pipe-Taps; and I do hereby declare the following to be a full, clear, and exact description of said invention, reference being had to the accompanying drawings, and to the letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in taps and reamers for cutting threads in steam and gas pipe fittings, and also to the mechanism by which said taps and reamers are held in place when operated. It is a well-known fact that the greater part of the work of a reamer and tap is performed by their front ends, whereby such parts become first worn away and rendered inoperative, while the rear threads of the tap are comparatively but little worn.

The object of my improvement is to provide a tap and reamer which, as their front ends become worn or dull, may be ground off and adjusted forward from time to time, whereby the life of such parts is greatly prolonged.

The construction of my invention is explained by reference to the accompanying drawings, in which—

Figure 1 represents a side view thereof. Fig. 2 represents a front end view. Fig. 3 represents a detail, part in section, drawn on line X X of Fig. 2. Fig. 4 is a detail, part in section. Fig. 5 represents a perspective view of one of the tap-retaining blocks removed from the machine.

Like parts are represented by the same reference-letters throughout the several views.

A represents the head block or chuck by which my adjustable taps and reamers are held in place and operated.

B B B B are the thread-cutting taps, which are held in place within the grooves C, formed therefor in the head-block A.

D D D D are the reamers, which are adjusted slightly in advance of the thread-cutting taps, whereby the surface of the pipe or fixture operated upon is smoothed in advance of the thread-cutting tap.

The reamers D D are held in place within the grooves E, provided therefor in the head-block A. Surrounding the head-block A is a heavy metallic band, F, which is shrunken upon and rigidly affixed to the periphery of the head-block A. The several taps B and reamers D are inserted in their respective grooves from the front end of the machine beneath the band F, when the tap-retaining blocks G G G G are inserted above the taps within the tap-retaining grooves C. The lower or inner surfaces of the several tap-blocks G are provided with a series of threads, H, corresponding with both the threads I of the cutting-taps and the threads I′, formed upon the periphery of the rear enlarged portion of the head-block A, whereby it is obvious that when the tap-retaining blocks G are in place the threads H of such blocks engage upon the cutting-threads I of the tap and the retaining-threads I′ of the head-blocks, thus retaining all the threads of the several taps in their proper relative positions to each other for work. When the several tap-blocks have been thus put in place upon the taps and tap-retaining threads I′, they are forced centrally inward upon the respective taps by the block-retaining screws J, whereby said taps are held rigidly and firmly in place.

When the end threads of the several taps, or any one of them, become dull or inoperative, said tap is readily removed by first unscrewing the set-screw J, and raising the tap-block G, engaging thereon. When the tap has been thus removed, the front or worn end may be ground away and the tap replaced beneath the retaining-block G. The several reamers D are held in place by their retaining-grooves, and may be adjusted forward in said grooves at the desired point by turning the headless screws K, they being retained in contact with said adjusting-screws K by contact with the surface operated upon. When the front ends of the reamers D become worn away and dull, said reamers are readily drawn forward and removed and their dull portions ground off, when they are again placed in their respective grooves, and the set-screws K are respectively turned forward against them a distance corresponding with that which has been cut away

from their front ends, whereby they are adjusted in their proper relative position to the thread-cutting taps.

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

1. In a pipe-thread-cutting tool, the combination of the head-block A, provided with tap-grooves C and tap-adjusting threads I′, cutting-taps B, located in their respective grooves C, inclosing-band F, surrounding said taps, tap-retaining blocks G, interposed beween said inclosing-band F and the respective taps B, the threads of said blocks G being adapted to engage at one end in the threads I of the cutting-taps and at their other ends in the tap-threads I′, formed upon the head-block A, and adjusting-screws J, operating in said inclosing-band F and engaging at their inner ends against said tap-retaining blocks G, substantially as and for the purpose specified.

2. In a pipe-thread-cutting tool, the combination of the head-block A, provided with reamer-retaining grooves E, reamers D, located in their respective retaining-grooves, adjusting-screws K, operating in screw-threaded apertures provided therefor in the rear end of said head-blocks A, and adapted to bear at their front ends against the rear or inner ends of said reamers D, substantially as and for the purpose specified.

3. In a pipe-thread-cutting tool, the combination of the head-block A, provided with tap-adjusting threads I′, formed on its periphery at its rear or inner end, tap-retaining grooves C, and reamer-retaining grooves E, formed longitudinally in the periphery at its front end, cutting-taps B, and reamers D, located in their respective grooves C and E, inclosing-band F, surrounding said taps, tap-retaining blocks G, interposed between said inclosing-band F and the respective taps B, the threads of said blocks G being adapted to engage both upon the threads I of the cutting-taps, and the adjusting-threads I′, formed upon the head-block A, adjusting-screws J, operating in said inclosing-band F and engaging at their inner ends against said tap-retaining blocks G, and adjusting-screws K, operating in screw-threaded apertures provided therefor in said head-block A and engaging at their inner ends against the rear ends of said reamers D, all substantially as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

HORACE C. BRADFORD.

Witnesses:
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