

(No Model.)

F. J. FELDT & F. C. MAHLER.
METAL REAMER.

No. 470,295.

Patented Mar. 8, 1892.

Fig. 1

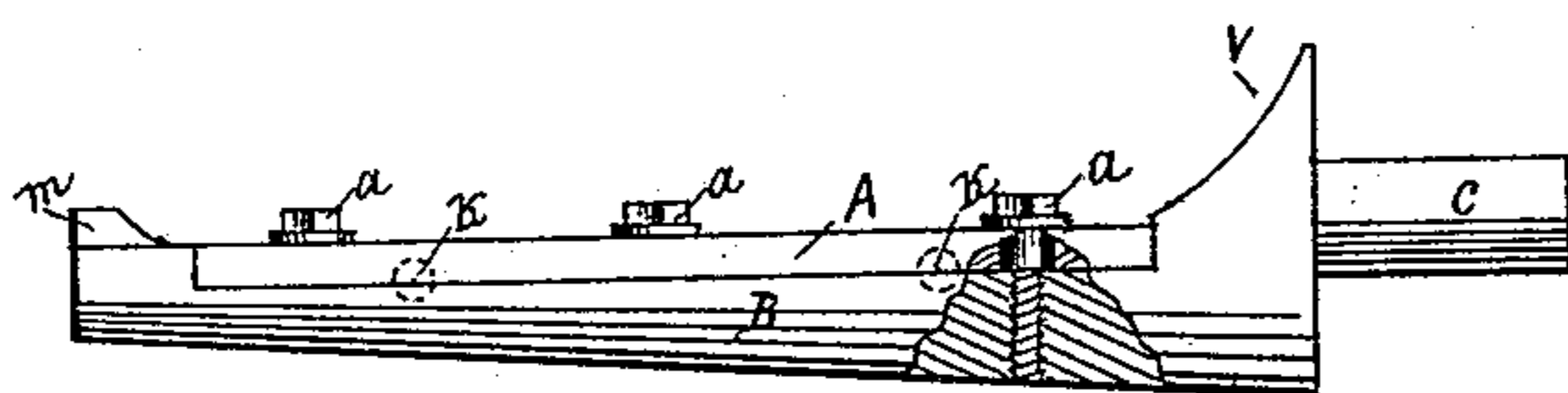


Fig. 2

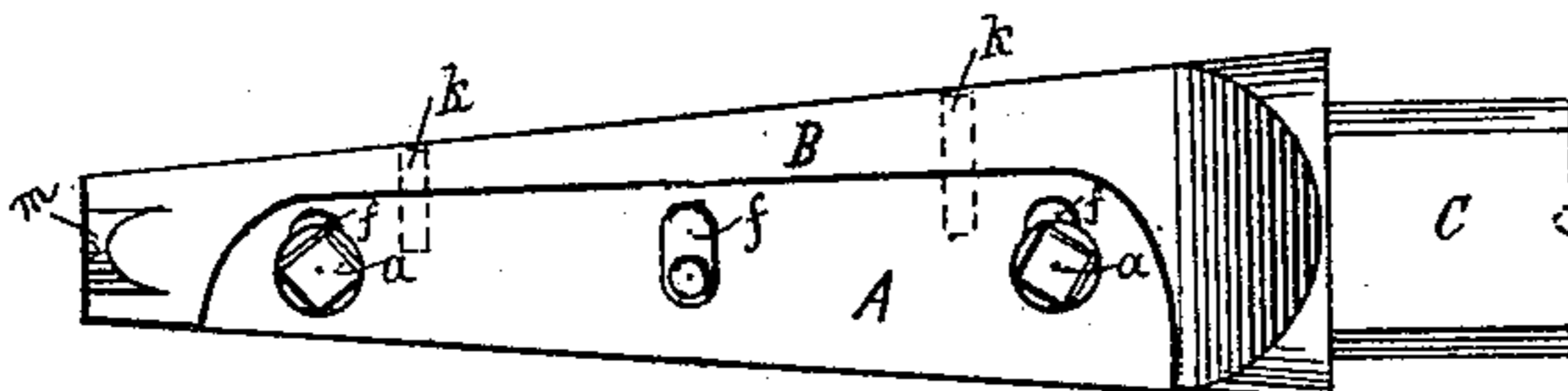
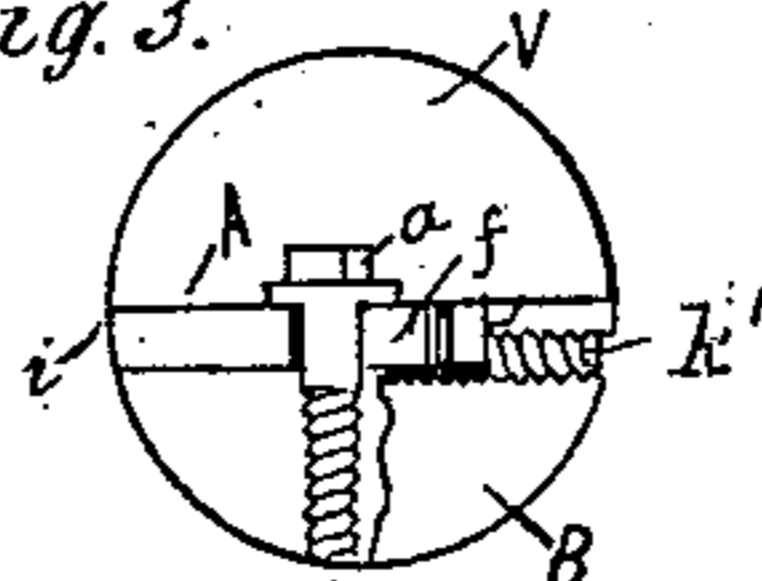


Fig. 3



Inventors:

Ferdinand J. Feldt,
Frank C. Mahler,
by Chas. E. Raabe,
Attorney.

Witnesses:

J. N. Watson
R. N. McCormick

UNITED STATES PATENT OFFICE.

FERDINAND J. FELDT AND FRANK C. MAHLER, OF PEORIA, ILLINOIS.

METAL-REAMER.

SPECIFICATION forming part of Letters Patent No. 470,295, dated March 8, 1892.

Application filed December 2, 1891. Serial No. 413,780. (No model.)

To all whom it may concern:

Be it known that we, FERDINAND J. FELDT and FRANK C. MAHLER, citizens of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Metal-
5 Reamers; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others
10 skilled in the art to which it appertains to make and use the same.

Our invention relates to certain new and useful improvements in metal-reamers by means of which a reamer is provided, simple
15 in construction and effective for the purpose designed, durable, and cheap in first cost.

More particularly our invention relates to that class of reamers adapted for reaming out
20 cocks, but may be used generally for reaming out metal tubes, &c.

The particular features of our invention consist, essentially, of the form of the reaming-tool, the same being semicircular, and of a detachable blade used in connection therewith,
25 and the means of securing thereto an adjustment thereon, as will be more fully shown hereinafter.

That our invention may be more fully understood, reference is had to the accompanying
30 drawings, in which—

Figure 1 shows the metal-reamer with a portion thereof broken away to show the means of securing the cutting-blade to the body of the tool. Fig. 2 is a plan view of the upper
35 face of the tool, showing the adjustment of the blade, &c. Fig. 3 is a cut sectional view or transverse section of the tool.

In the figures, B represents a conically-shaped section or body tapering from its base
40 to its extremity and provided at its base with the stem C, purposed to fit within the socket of the chuck and being recessed at its upper face to receive the cutting-blade A.

a a a are set-screws, bearing through the
45 slots *fff* in the blade A and within threaded openings in the body B of the tool to secure the said blade in proper adjustment for operation.

k k are threaded openings purposed to receive the headless screw *k'*, which said screw
50 is in alignment with and is designed to bear against the back of the blade A to facilitate

its adjustment and to resist the tendency of the blade to be pushed backward by contact with hard metals.

i represents the cutting-edge of the blade, provided to engage with the body of the metal
55 desired to be cut or reamed.

V is a raised portion at the base of the reamer, to which, together with the main body, the stem C is integrally connected.
60

m is a raised portion at the forward end of the reamer, provided as a bearing at center of the circle described by the revolving tool to enable the tool to be cut in the lathe when the
65 body of the tool is first being formed.

Tools that have heretofore been constructed for the purpose herein specified have been either wholly inadequate for the purpose designed or lack the element of durability possessed by our improved tool. Reaming-tools
70 have been made with bodies similar to B with the edge of the metal formed into a cutting-tool, and when the same became dulled by use it could only be sharpened by cutting away the entire body of the tool until a proper edge was presented, this requiring a great amount of labor and time, and as they
75 were required to be sharpened quite frequently, owing to the extreme hardness of the metal that might be designed to be cut and by the presence of more or less sand or
80 grit within the cocks which they were required to ream out, acting to dull the tool or the edge thereof, and the sharpening process will constantly reduce the size of the tool and render the same useless. Tools were also
85 constructed in the form of a blade, but were not practical in operation, as it was somewhat flexible and had a tendency to bear away from the metal by contact therewith, thus cutting an uneven and irregular opening or leaving the surface thereof rough. All the disadvantages incident to the use of the styles of tool just mentioned are overcome by
90 the use of our improved reaming-tool.

The operation of the device is apparent, the tool being first fixed to a rapidly-rotating medium, the connection therewith being made through and by means of the stem C. The cock is run upon the tool and is readily
100 reamed out, the hole therein being made larger the farther the same is pushed upon the tool. When the blade becomes dull, the

same may be detached from the body of the tool by removing the set-screws *a a a* and ground or sharpened and again easily replaced and secured, or the blade may be
5 ground without detaching same by merely slipping same forward in slots *f f f*, and to facilitate the adjustment of the blade *A* the headless screws *k'* are provided, that bear
10 against the back edge of the blade, and by screwing the same forward when the set-screws are slightly loosened the edge of the blade is forced outward, and the blade is held in this position by contact with the ends of the said screws and by the set-screws *a a a*, &c.
15 The detailed structure of the tool may be varied to suit the application in which it may be desired to be used, and also the material used in its construction may be of anything suitable for the purpose. The blades may be
20 attached to a body made rounding, flat, square, or in any form.

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

In a reaming-tool, the combination, with the 25 half-circular body *B*, tapering from base to extremity and provided with the stem *C* and raised portions *V* and *m* and having the threaded openings and the headless screws *k'*, of the blade *A*, provided with the slots *f f*, 30 against the back of which the headless screws *k'* bear, and secured to the metal body *B* by means of the set-screws *a a a*, bearing in threaded openings in the metal body, all substantially as described and set forth. 35

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

FERDINAND J. FELDT.
FRANK C. MAHLER.

Witnesses:

EDWARD SEITZ,
CHARLES R. UHLMANN.