(No Model.)

C. KELLOGG.

REAMER.

No. 302,687. Patented July 29, 1884.

Fig. 1.

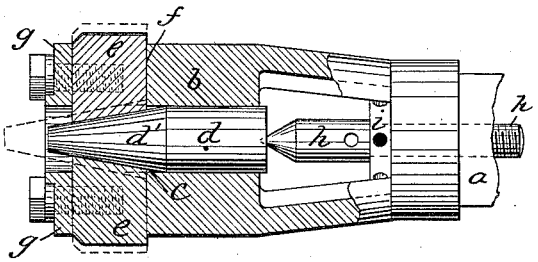


Fig. 3.

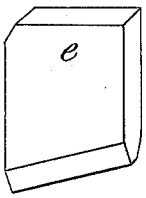
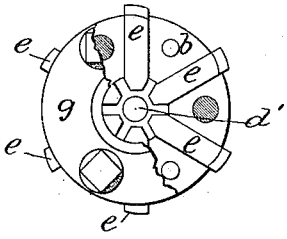


Fig. 2.



Witnesses:

Ed. F. Dimock.

A. C. Tanner.

Inventor:

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Attys.

UNITED STATES PATENT OFFICE.

CHARLES KELLOGG, OF HARTFORD, CONNECTICUT, ASSIGNOR OF ONE-HALF TO EDWARD B. NICHOLS, OF SAME PLACE.

REAMER.

SPECIFICATION forming part of Letters Patent No. 302,687, dated July 29, 1884.

Application filed December 28, 1883. (No model.)

To all whom it may concern:

Be it known that I, CHARLES KELLOGG, of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Reamers; and I do hereby declare that the following is a full, clear, and exact description thereof, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

Figure 1 is a side view of my improved device, with parts cut away to show construction. Fig. 2 is an end view of same with the friction-cap partly removed. Fig. 3 is a detail view of one of the reamer-blades.

My invention relates to the class of reamers termed "expansion reamers," in which the blades or cutters are adjustably arranged in the reamer-stock, and are projected to certain determined limits to cut to various diameters.

It consists in the peculiar combination of the shank, stock with guide-socket, movable tapered plug, adjustable blades, feed-screw, and other parts, as more particularly hereinafter described.

In the accompanying drawings, the letter *a* denotes a handle or shank, preferably metallic; *b*, the reamer-stock fast to the shank; *c*, a central longitudinal socket in the stock, in which the plug *d* is fitted and arranged to slide, with its tapered end *d'* engaging and supporting the cutters or blades *e*, that move in radial sockets *f* in the front end of the stock. These cutters are held from accidental displacement by the friction-plate *g*, that is attached to the end of the stock by screw-bolts, with heads slotted or squared for the application of a wrench, and bears upon the ends of the cutters. Back of the plug, and having its axis in continuation of that of the plug, is the feed-screw *h*, having a conical point taking against the center of the end of the plug, and a threaded stem that is fitted in a threaded socket in the shank. The rear or cylindrical portion of the plug *d* is fitted quite closely in the cylindrical socket in the stock *b*, in such manner as to allow longitudinal motion, but prevent any sidewise play of the tapered end of the plug, upon which the movable cutters are seated. The feed-screw *h*, being distinct and separate from the tapered plug, is rotated to adjust the plug without tending to rotate the plug *d*, which permits of a more ready adjustment of the blades than is possible with the device made prior to my invention, in which the feed-screw and tapered plug are integral parts. The lock or set nut *i* on the stem of the feed-screw serves to hold it in any desired position in the ordinary manner.

The operation of the device is shown by the dotted lines in Fig. 1, which represent the position of the parts when the plug is forced forward to the front limit of its path, the blades having each a beveled lower edge cut to the angle of the taper of the plug on which they rest, and being of course thrust outward when the plug is advanced.

I claim as my invention—

In combination with a reamer-shank, *a*, bearing a stock, *b*, a tapered plug, *d*, radially-movable blades *e*, seated on the tapered portion of the plug, the friction-plate *g*, the feed-screw *h*, separate from the plug, and a set-nut, *i*, all substantially as described.

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Witnesses:
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