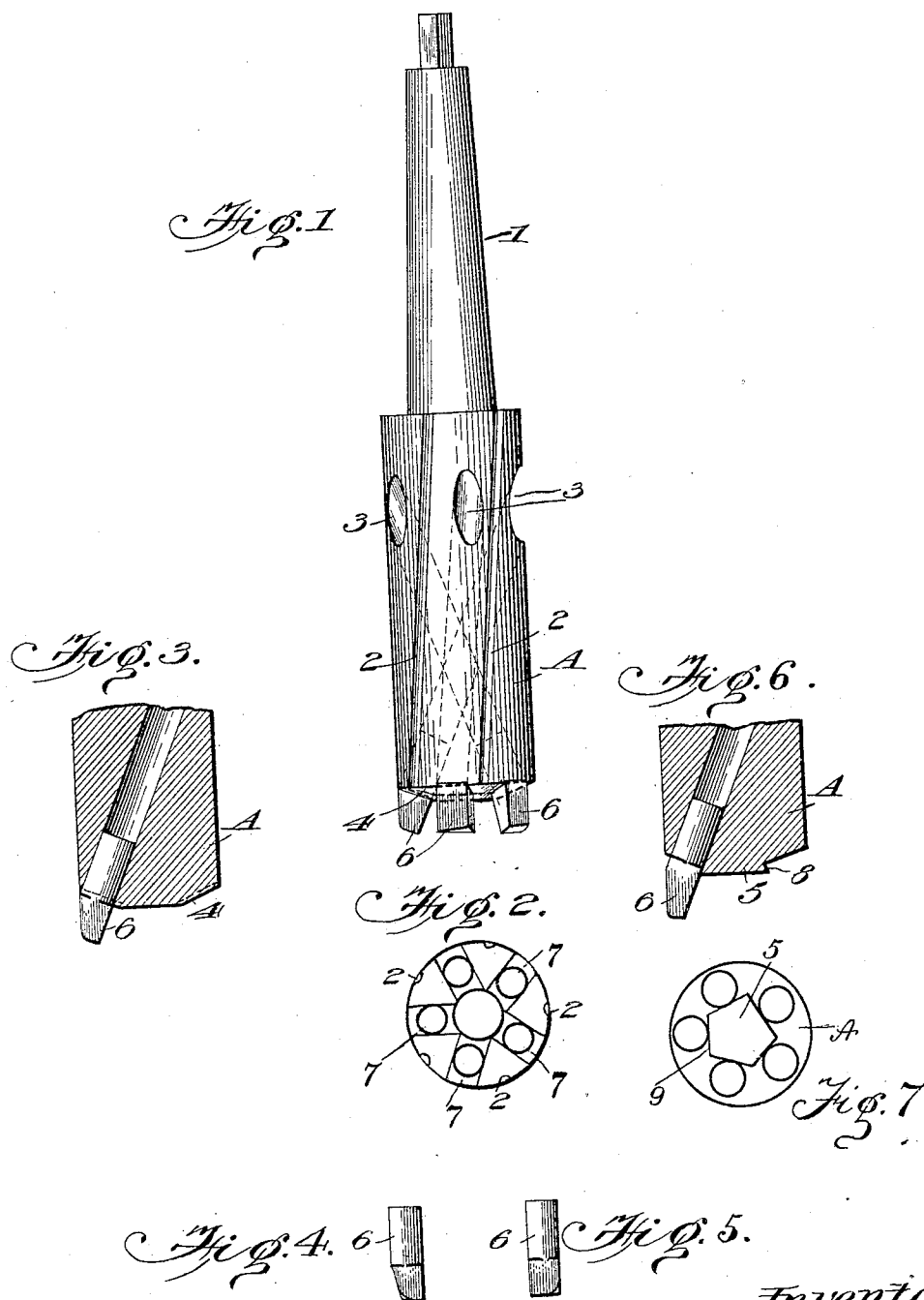


REAMER.

Patented Feb. 1, 1910.

948,269.



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UNITED STATES PATENT OFFICE.

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REAMER.

948,269.

Specification of Letters Patent.

Patented Feb. 1, 1910.

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To all whom it may concern:

Be it known that I, CORNELIUS J. CROWLEY, a citizen of the United States, residing at Burlington, in the county of Des Moines and State of Iowa, have invented certain new and useful Improvements in Reamers, of which the following is a specification.

My invention relates to an improvement in reamers and the object is to utilize high speed steel cutters of small size in a body of cheaper material.

A further object resides in the manner of inserting and holding these cutters in place which will permit of their easy removal.

The invention consists in certain novel features of construction and combinations of parts which will be hereinafter described and pointed out in the claims.

In the accompanying drawings:—Figure 1 is a view in side elevation, Fig. 2 is a bottom plan view, Fig. 3 is a sectional view showing the connection of a cutter to the reamer, Figs. 4 and 5 are detail views of the cutters, Fig. 6 is a modified form of the locking connection in section of the cutters, and Fig. 7 shows plan of modified form.

A, represents the reamer, and 1, the shank. Diagonal grooves 2, are formed on the surface of the reamer, forming oil ducts; and extending through the body of the reamer to the lower end of the reamer body are the cutter holes or openings 3. In some instances, the cutter holes will cross each other, and in other instances, they will run lengthwise straight down or at a slight angle from the top of the reamer body. The lower end of the reamer has the edges thereof beveled as at 4.

The cutters 6 are round for about two-thirds of their length, and the lower or remaining portion is made square, although on certain portions the square end is ground off. The squared ends of the cutters form cutting surfaces. The cutters are inserted into the openings 3 at the lower end of the reamer. The cutters are held in the reamer under pressure to prevent the cutters from turning during the operation of the reamer. A groove 7 is milled about one-sixteenth of an inch deep for the reception of the squared portion of the cutter at the lower end of the reamer forming a lock for the cutter and preventing its rotation in the opening, and permitting of its forming a rigid cutting surface.

In the modified form I have shown the

central portion of the lower end of the reamer beveled inwardly as at 8, and the edge is squared off as at 9 at certain intervals to receive the squared portion of the cutters for locking them against movement.

From the foregoing it will be seen that I have provided means for inserting cutters in a reamer which permits of the cutters being easily removed from the reamer, and the manner of locking the cutters in the reamer is of a simple character, and at the same time will prevent the cutters from rotating. Furthermore, in providing the cutters partly round, and the remaining portions squared, permits of a locking connection being made between the cutter and reamer.

It is evident that more or less slight changes might be resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the exact construction herein set forth, but:—

Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A reamer comprising a body portion having orifices drilled therethrough, and cutters inserted under pressure, and locking means integrally formed on the cutters in position to engage a part of the body to prevent the cutters from turning.

2. A reamer comprising a body portion having orifices drilled therethrough, cutters inserted through the orifices, said cutters having angular formations thereon, and the body portion also having an angular formation adapted to be engaged by the angular formation on the cutters whereby to lock the latter from turning.

3. A reamer comprising a body portion having orifices formed in the outer end thereof, and extending inward, the extreme outer end of the body portion having an angular formation, and cutters inserted in the orifices and impinging laterally against the angular formation on the end of the body portion whereby to prevent the cutters from turning in their orifices.

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

CORNELIUS J. CROWLEY.

Witnesses:

EDWARD RAPP,
C. E. CARR.