

L. BAUM.
EXPANSIBLE REAMER.
APPLICATION FILED DEC. 17, 1912.

1,079,630.

Patented Nov. 25, 1913.

2 SHEETS-SHEET 1.

Fig. 1.

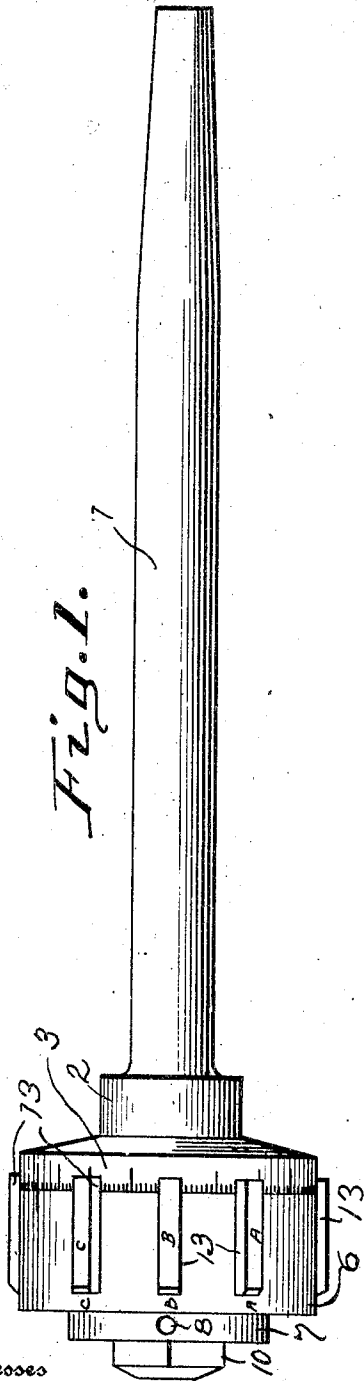
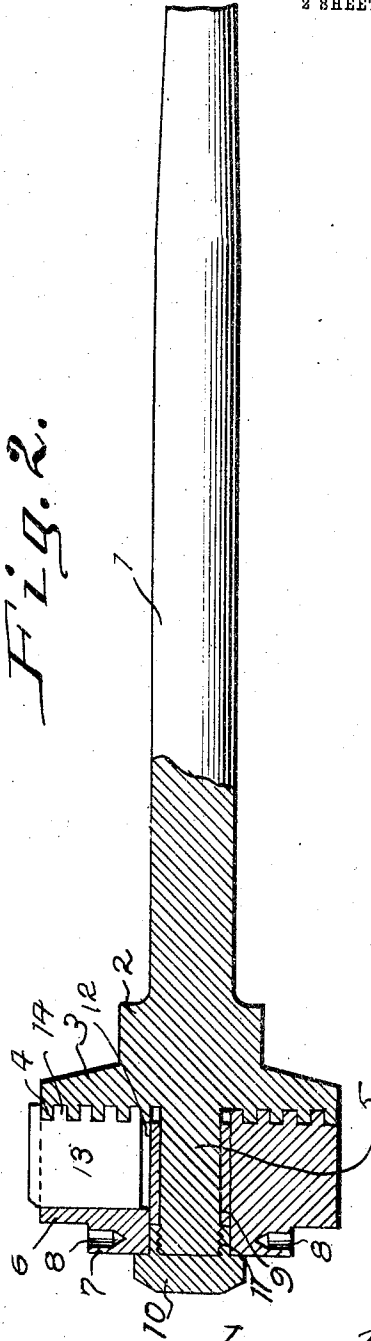


Fig. 2.



Witnesses

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334

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2 SHEETS—SHEET 2.

Fig. 3

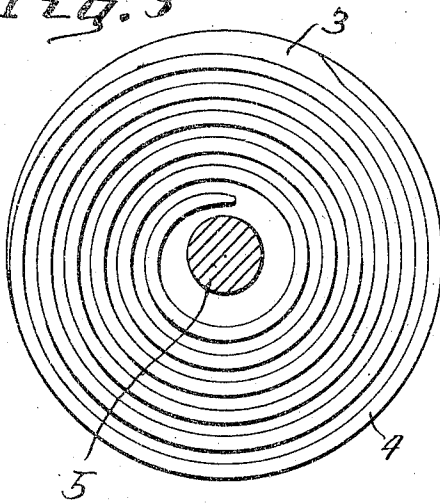


Fig. 4

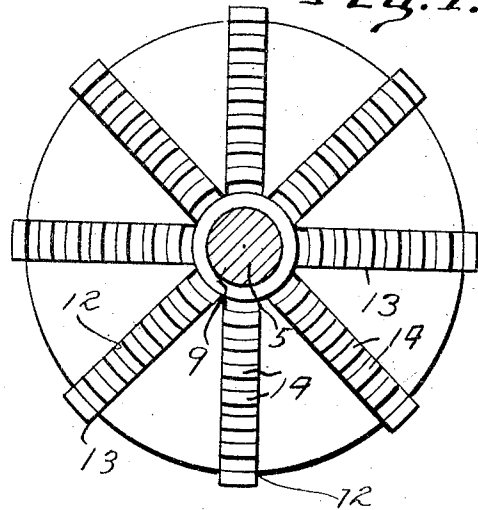


Fig. 5

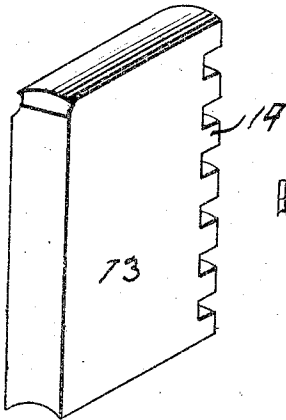
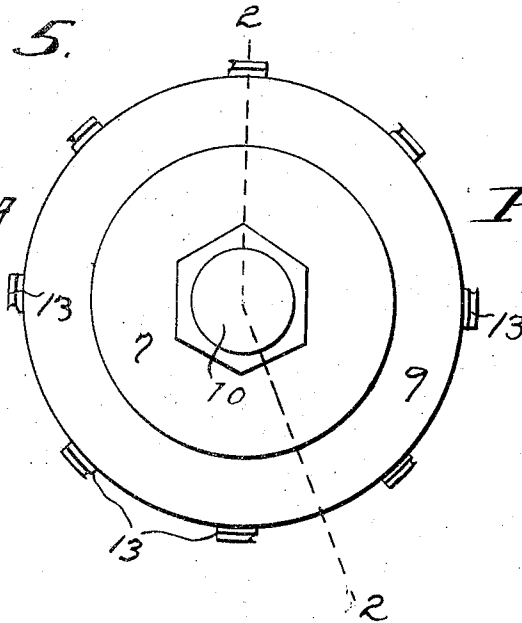


Fig. 6



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UNITED STATES PATENT OFFICE.

LOUIS BAUM, OF PATERSON, NEW JERSEY.

EXPANSIBLE REAMER.

1,079,630.

Specification of Letters Patent.

Patented Nov. 25, 1913.

Application filed December 17, 1912. Serial No. 737,345.

To all whom it may concern:

Be it known that I, LOUIS BAUM, a citizen of the United States, residing at Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Expansible Reamers, of which the following is a specification.

This invention relates to improvements in reamers and more particularly to expansible reamers which may be easily adjusted to fit different bores and which may be securely locked in their adjusted positions.

The primary object of the invention resides in the provision of a tool of this nature, which will be of extremely simple construction, cheap to manufacture, strong, durable, and easy to adjust.

The invention also aims to generally improve tools of this nature to render them more useful and commercially desirable.

With these and other objects in view as will become more apparent as the description proceeds, the invention consists in certain novel features of construction, combination, and arrangement of parts, as will be hereinafter described and claimed.

For a complete understanding of my invention, reference is to be had to the following description and accompanying drawing, in which,

Figure 1 is a side elevation of my invention, Fig. 2 is a sectional view taken upon the plane of line 2—2 of Fig. 6, Fig. 3 is an end elevation showing the spiral thread upon the spindle flange, Fig. 4 is an end elevation of the cylindrical head showing the cutters mounted therein, the spindle being shown in section, Fig. 5 is a perspective view of one of the cutters, and, Fig. 6 is an end elevation of my invention complete.

In the following description and accompanying drawings, similar parts will be referred to and designated by like reference characters.

Referring in detail to the drawings by numerals, 1 designates a spindle enlarged, as at 2, and formed with the annular flange 3, said flange being provided upon its outer face with a spiral thread 4. The portion 5 of the spindle which extends beyond the flange 3 is of a reduced diameter, as clearly shown in Fig. 2, and is threaded adjacent its extremity.

A cylindrical head 6 having an external diameter equal to that of the flange is mounted for revolution upon the reduced

portion 5 of the spindle. The head 6 is of a reduced diameter adjacent its outer end, as indicated at 7, and said reduced portion is formed with a plurality of sockets 8 to receive a spanner wrench when it is desired to rotate said head upon the spindle. A preferably bronze bushing 9 is fitted within the bore of the head 6 and terminates short of the outer face thereof, as clearly shown in Fig. 2. A lock nut 10 having an internally threaded portion 11 is employed to lock the head against rotation relative to the spindle. The portion 10 of said nut threads upon the end of the spindle between the same and the reduced portion 7 of the head.

The head is formed with a plurality of radial slots 12, which open upon the periphery and the inner face of the same. Within these slots are positioned cutters 13, formed with the segmental threads 14 of the same pitch as the thread 4 and adapted to engage the same. If desired, the cutters may be marked with some arbitrary symbols, such as A, B, C, etc., and the cutter head 6 may be correspondingly marked on its periphery so as to indicate into which slots the respective cutters fit. This marking will greatly facilitate the assembling of the tool. The periphery of the flange 3 may be graduated if desired, as shown in Fig. 1, so as to assist in determining the adjustment of the cutters.

To adjust the cutters, the nut 10 is first loosened and the head 6 rotated in the required direction. A rotation in one direction will move the cutters outwardly whereas a rotation in a reverse direction will draw the cutters inwardly toward the spindle. When the proper adjustment has been made, the nut 10 is again tightened, which locks the cutters in their adjusted positions. It will be noted that the head 6 provides an excellent guide for the cutters 13 and that the spiral thread 4 co-acts with the segmental threads 14 in such a manner as to permit a very fine adjustment being made.

It is to be understood that my improved reamer may be made in various sizes for use with different kinds of work and that I may also make changes in the construction, combination, and arrangement of parts, provided I do not depart from the scope of the claims.

Having thus described my invention, what I claim is:—

1. An expansible reamer, comprising a

spindle having an annular flange formed thereon intermediate its ends, said flange being provided upon its outer face with a spiral thread, the spindle being of a reduced diameter upon one side of said flange, a head 5 mounted for revolution upon said reduced spindle portion, said head being of a reduced diameter adjacent its outer end and formed with socket openings to receive a spanner wrench, the head being also formed with a 10 plurality of radial slots, cutters sliding within said slots and formed with threads for engagement with said spiral threads, and a locking nut threaded upon said spindle for 15 engagement with the outer face of the head.

2. An expansible reamer comprising a spindle having an annular flange formed integral therewith, said flange being provided upon its outer face with a spiral thread, the 20 spindle being reduced adjacent its outer end, a head having an external diameter equal to

said flange, the head being reduced in diameter adjacent its outer end and formed with sockets adapted to receive a spanner wrench, a bushing fitted within the bore of 25 said head and terminating short of the outer end thereof, said bushing being revoluble upon the spindle, a plurality of cutters movable within radial slots formed in said head, the cutters being provided with segmental 30 threads for engagement with said spiral thread, and a locking nut threaded upon the extremity of said spindle between the same and the head, said nut bearing against the outer face of the head. 35

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

LOUIS BAUM.

Witnesses:

GARRET VAN CLEVE,
P. A. WESTERVELT.