

UNITED STATES PATENT OFFICE.

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REAMER-MANDREL.

SPECIFICATION forming part of Letters Patent No. 789,866, dated May 16, 1905.

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To all whom it may concern:

Be it known that I, SIMON J. MILLER, a citizen of the United States, residing at Parkersburg, in the county of Wood and State of West Virginia, have invented certain new and useful Improvements in Reamer-Mandrels; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in mandrels for reamers and the like.

The object of the invention is to provide a mandrel from which the reamer may be quickly and easily removed and replaced without taking the mandrel from the machine, thus saving a great deal of time and obviating the possibility of injuring the tool by forcibly driving the same off of the mandrel, as is commonly or usually done.

A further object is to provide a mandrel of this character which will be simple, strong, and durable in construction, efficient in use, and well adapted to the purpose for which it is designed.

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

In the accompanying drawings, Figure 1 is a side elevation of a mandrel having applied thereto a reamer. Fig. 2 is a vertical sectional view of the same, and Fig. 3 is a cross-sectional view taken through the key-bar for holding the reamer against turning on the stem of the mandrel.

Referring more particularly to the drawings, 1 denotes a mandrel which comprises a shank 2, whereby the same is connected with a machine, and a reduced stem formed on the lower end of said shank. At the juncture of the stem 3 of the shank 2 is formed a short section of right-hand screw-threads 4, with which is adapted to be engaged a nut 5, said nut being provided on its lower side with a downwardly-projecting boss 6, having a centrally-disposed aperture of such diameter as to loosely engage and slide upon the stem below the threaded portion 4.

On the stem 3 is slidably mounted a sleeve 7, the upper end of which is adapted to be engaged by the lower end of the boss 6. In the lower end of the sleeve 7 at diametrically opposite points are formed rectangular notches or recesses 8, which are adapted to slidably engage the laterally-projecting ends of a key-bar 9. This key-bar 9 is driven through and has a rigid connection with a transversely-disposed slot or aperture 10, formed in the stem.

On the end of the stem 3, below the lower end of the sleeve 7, is adapted to be placed the tool or bit, which is here shown as a reamer 12, said reamer being provided with a central longitudinally-disposed passage into which the end of the stem is inserted. The upper end of the reamer is provided with notches or recesses 13, which are arranged at diametrically opposite points and are adapted to be engaged with the laterally-projecting ends of the key-bar 9, as shown.

When the reamer is in place on the lower end of the stem, the same is held against turning by the laterally-projecting ends of the key-bar, and when it is desired to remove the same from said stem the nut 5 is screwed downwardly on the threaded section 4, thus forcing the sleeve 7 downwardly, which by reason of its engagement with the upper end of said reamer will loosen or unseat the same, thus permitting said reamer to be readily slipped off from the end of the stem without removing the mandrel from the machine.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

1. A reamer-mandrel comprising a shank, a reduced apertured stem formed on said shank, a short section of screw-threads formed on said stem, a nut to engage said threads, a key-

bar rigidly secured in the aperture of said stem, and a sleeve slidably mounted on said stem, said sleeve having notches formed in its lower end to slidably engage the laterally-projecting ends of said key-bar whereby when said nut is screwed downwardly the sleeve will be forced into engagement with the reamer on the lower end of the stem to unseat or loosen the same, substantially as described.

10 2. A reamer-mandrel comprising a shank, a reduced apertured stem formed on said shank, a short section of screw-threads formed on said stem, a nut to engage said threads, a key-bar rigidly secured in the aperture of said
15 stem, a sleeve slidably mounted on said stem,

said sleeve having notches formed in its lower end to slidably engage the laterally-projecting ends of said key-bar, and a reamer arranged on the lower end of said stem, said reamer having slots formed in its upper end to engage said key-bar, whereby the same is held against turning on said stem, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

SIMON J. MILLER.

Witnesses:

JNO. KALTENECKER,

A. M. SAIK.