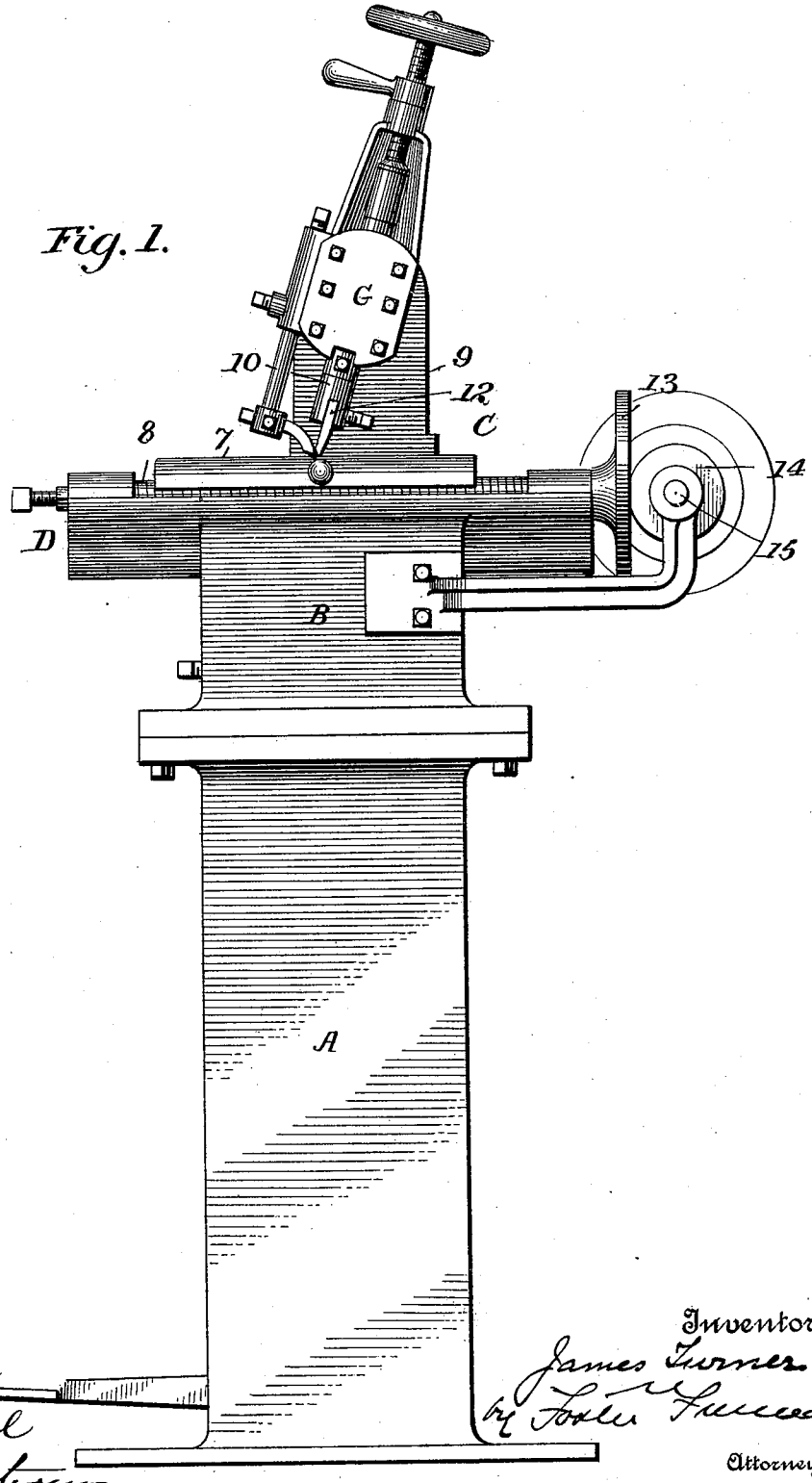
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J. TURNER.

FILE CUTTING MACHINE.

No. 589,232. Patented Aug. 31, 1897.

Fig. 1.



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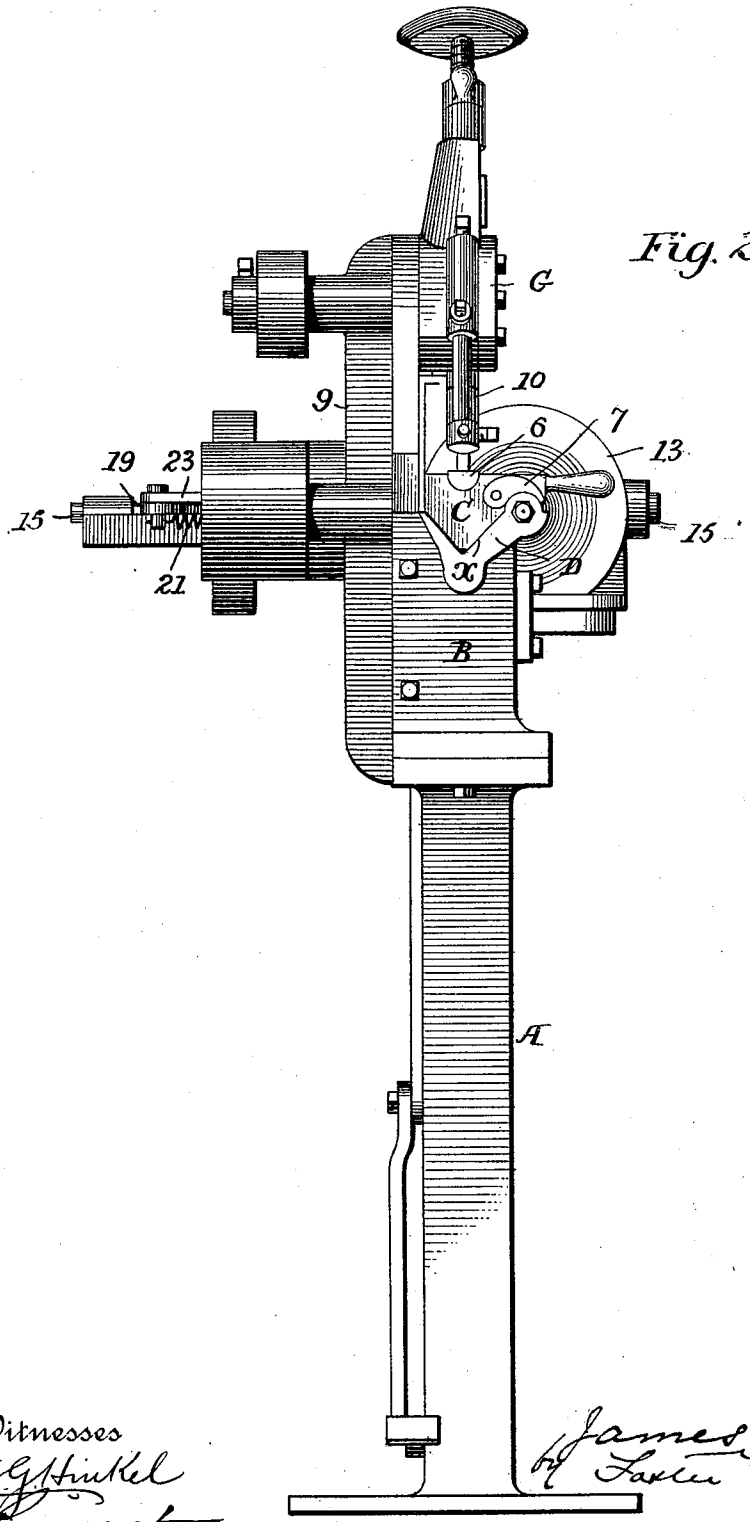


Fig. 2.

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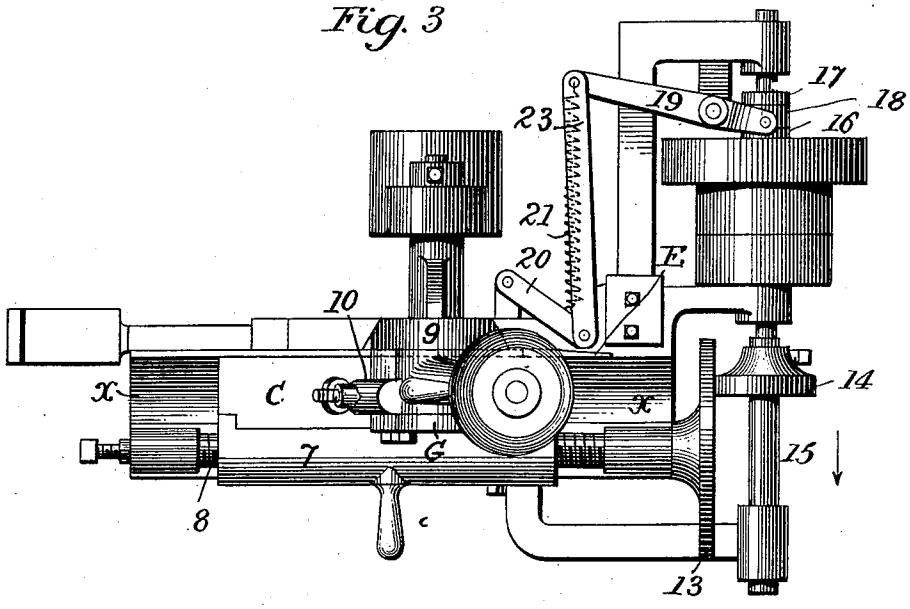
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Fig. 3



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UNITED STATES PATENT OFFICE.

JAMES TURNER, OF PATERSON, NEW JERSEY, ASSIGNOR TO THE KEARNEY & FOOT COMPANY, OF NEW YORK, N. Y.

FILE-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 589,232, dated August 31, 1897.

Application filed January 6, 1897. Serial No. 618,184. (No model.)

To all whom it may concern:

Be it known that I, JAMES TURNER, 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 File-Cutting Machines, of which the following is a specification.

My invention relates to improvements in machines for cutting rasps, files, &c., as fully set forth hereinafter and as illustrated in the accompanying drawings, in which—

Figure 1 is a side view of my improved machine as arranged for cutting rasps. Fig. 2 is an edge view, and Fig. 3 is a plan view.

The frame of the machine is of any suitable construction. As shown, there is a pedestal A, supporting the base B, upon which there is a horizontal guide D, having a guide groove or channel *x* in which slides the carriage C, having at the upper side a recess for the reception of the adjustable bed 6, to which the file-blank is applied. According to the character of the file, whether round, square, or otherwise, the support for the same upon the carriage may be varied.

To one side of the carriage is hinged a long half-nut 7, having a longitudinal threaded recess adapted to engage the threads of the feed-screw 8, turning in suitable bearings upon the base, and in an adjustable support G at one side of a standard or bracket 9 reciprocates the tool-holder 10, having at the lower end a receptacle for the tool 12 of suitable construction. The holder is reciprocated by mechanism of ordinary character, which need not be described.

In cutting certain classes of files it is desirable to vary the feed, so that the teeth are cut closer together at the point or end of the file than farther along toward the shank, and in order to effect this variation with precision and secure the exact character of variation according to the character of files to be cut I make use of means which I will now describe.

The feed-screw 8 is provided at one end with a friction disk-wheel 13, with the surface of which frictionally engages the periphery of a friction drive-wheel 14 upon a driving-shaft 15 at right angles to the screw 8, and in combination with these parts I employ suitable means whereby the friction drive-wheel 14 may be gradually moved inward toward the center of the disk 13 as the cutting of the blank progresses, to thereby increase the speed of rotation of the screw 8 and the extent of the feed. Different means may be employed for shifting the drive-wheel 14. As shown, the shaft is mounted upon bearings, so as to slide longitudinally therein, the drive-wheel 14 being secured fixedly to the shaft, and I impart the longitudinal movement to the shaft from a former E, secured to the carriage or other movable part, through the intervention of any suitable devices. For instance, the shaft 15 has two collars 16 17, between which is a loose ring 18, carried by a forked lever 19, pivoted to the frame, and the former or pattern-plate E is so arranged that a lever 20, pivoted to the frame, can bear at its free end against the face of the said plate, a spring 21 tending to maintain the two in contact and a connecting-rod 23 extending from the end of the lever 20 to the tail of the lever 19.

The plate E is of any suitable form or construction, according to the extent to which the shaft 15 is to be shifted and the variation of this shifting action. For instance, it is somewhat wedge-shaped or tapering, so that at the beginning of operations but little movement is imparted to the shaft 15, and as the operations continue the shaft is gradually thrown in the direction of its arrow, thereby gradually increasing the speed of rotation of the feed-screw 8.

Whenever it is desired to carry back the carriage C or adjust it in position without the screw, the half-nut 7 may be lifted out of contact with the screw, and the carriage may then be shifted as required. By making use of a long half-nut, as shown, all tremor or vibration or play of the carriage in respect to the screw is avoided, and the blanks are cut with absolute precision.

It will be evident that my improved devices for feeding the blanks may be employed with file and rasp cutters of different constructions.

Without limiting myself to the precise construction and arrangement of parts shown, I claim as my invention—

In a file or rasp cutting machine, the combination with the cutter and carriage, of a

feed-screw for moving said carriage, a disk carried upon the feed-screw, a friction-wheel engaging said disk, a longitudinally-movable driving-shaft upon which the friction-wheel is fixedly mounted, a movable pattern-plate carried by the carriage and connections intermediate said plate and the driving-shaft for shifting the latter, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES TURNER. [L. S.]

Witnesses:
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CHAS. E. WATTS.