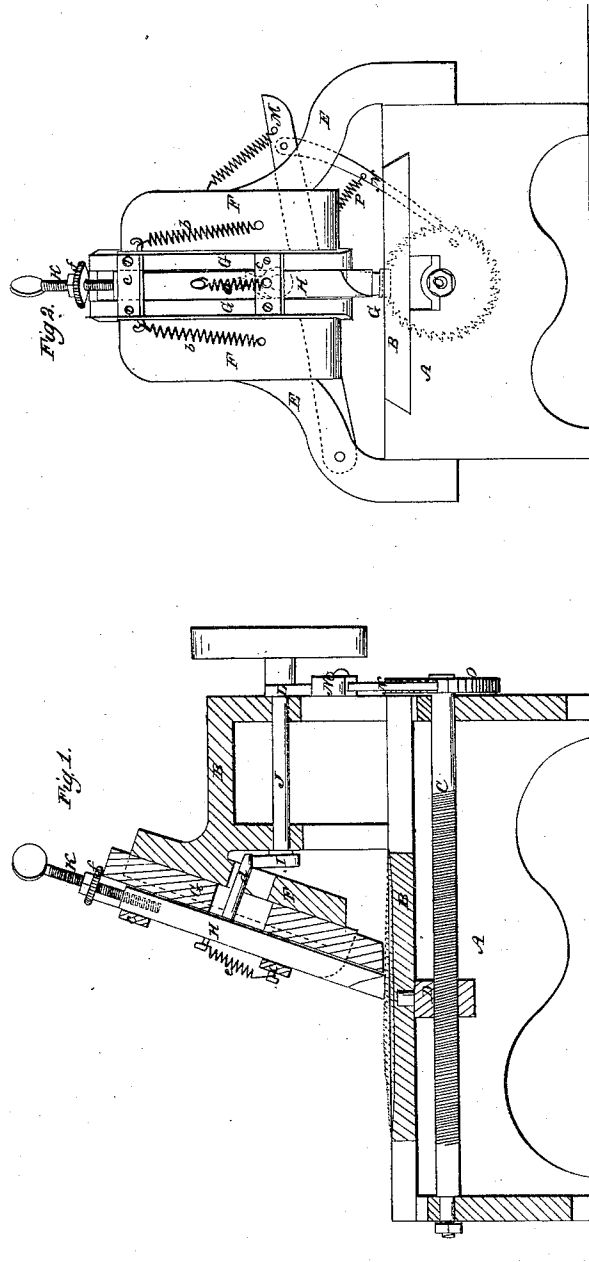


C. Miller.

Tile-Cutting Machine.

N^o 16,064.

Patented Nov. 11, 1856.



UNITED STATES PATENT OFFICE.

CHARLES MILLER, OF NEW YORK, N. Y.

CUTTING FILES.

Specification of Letters Patent No. 16,064, dated November 11, 1856.

To all whom it may concern:

Be it known that I, CHARLES MILLER, of the city, county, and State of New York, have invented a new and useful Improvement in Machinery for Cutting Files; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, is a longitudinal vertical section of a file cutting machine with my improvement. Fig. 2, is a front elevation of the same.

Similar letters of reference indicate corresponding parts in both figures.

This invention consists in a certain contrivance for regulating the operation of the chisel for the purpose of producing a uniform depth of cut from end to end of the file.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A, is a stationary table containing ways for a horizontal sliding carriage B. This carriage B, has a cavity in its upper surface which is to be lined at the bottom with some sufficiently soft metal to serve as a bed for the file blank to rest in during the cutting operation, said cavity or bed being of such length, width and form as to prevent the file blank moving longitudinally or laterally during the cutting operation. A file blank is represented on the carriage B, in both views in red outline.

C, is an endless screw working in fixed bearings in the end of the table A, and fitting to a nut D, secured under the carriage B, for the purpose of moving the carriage to feed the file blank to the chisel.

E, is a strong bridge piece striding across and firmly secured to the table A, to support the fixed guide F, to which is fitted the chisel stock G, said guide being inclined backward from the bottom upward, to throw forward the lower end of the chisel. The bottom of the chisel stock is required to rest upon the upper face of the file blank during the cutting operation and in order to keep it firmly in contact therewith the chisel stock is connected with the guide F, by means of two springs *b, b*, which hold it down but at the same time permit it to rise over the curved surface of the file blank as the latter moves longitudinally under it. The bottom

part of the stock which rests on the file blank is made narrower than the narrowest file intended to be cut in the machine so that it may not project beyond the edges of the file blanks.

H, is the chisel which is fitted to slide up and down in a groove in the front of the stock G, and is confined in place by two cross pieces *c, c*, secured to the stock. The chisel is moved upward to prepare to strike the file blank to produce the cutting operation, by means of a cam I, on a rotating shaft J, which works in bearings in the bridge piece E, said cam operating on the under side of a stud *d*, which is secured to the back of the chisel and passes through a slot in the back of the stock G. The descent of the chisel to strike the blow, is produced after the point of the cam passes the stud *d*, by the action of a spring *e*, which connects it with the lower crosspiece *c*. The shaft J, carries another cam I, which operates to depress a lever M, to which is attached a pawl N, engaging with a ratchet wheel O, on the end of the screw C. The depression of the lever M causes the pawl N, to give motion to the ratchet wheel and thus move the screw to produce the feed motion of the carriage. The lever M, is raised again after the action of the cam by means of a spring P. The cams must be arranged so that the feed takes place while the chisel is stationary.

K, is a screw screwing directly into the head of the chisel H, and provided with a broad-flanged nut or collar *f*, which, when the chisel strikes its blow, comes in contact with the top of the stock G, which serves as a stop thereto and thus serves to prevent the further movement of the chisel and hence regulates the depth of cut. The depth of cut may be varied, by screwing the nut K, farther into or out from the chisel head and using a collar at *f*, that is immovable on the screw, or by employing a nut at *f*, to screw up higher or down lower and having the screw immovably attached to the chisel head.

It must be observed that the left of the cam must be sufficient to give the chisel a sufficient amount of fall to cut to the required depth on the thickest or highest part of any file. This being the case it will be readily understood that as the chisel stock G always rests on the file blank close to the chisel and serves as the stop to the descent of the chisel, the depth of cut must be per-

fectly uniform from end to end of the file, whatever may be its form in a longitudinal direction. This result is the most difficult of all to obtain in cutting files and upon
5 its perfection the good quality of the file in a great measure depends.

Instead of having the stock G, rest directly upon the file blank it may rest upon a pattern or patterns of corresponding form
10 attached to the carriage on one or both sides of the file blank. I do not contemplate using any such arrangement, as it is more complicated, less reliable, and altogether inferior to the arrangement of the stock to
15 rest on the file-blank itself, but mention it to show that the principle of the invention is capable of modification.

I do not claim the mere employment of a stop to regulate the depth of cut of the chisel. But

What I claim as my invention and desire to secure by Letters Patent, is—

Fitting the chisel to work in a stock which rests upon the file blank itself or on a pattern of similar form moving with it
25 throughout the whole length of the movement of the blank under the chisel, and serves as a stop to the chisel, substantially as and for the purposes herein described.

CHARLES MILLER.

Witnesses:

W. TUSCH,
JAMES F. BUCKLEY.