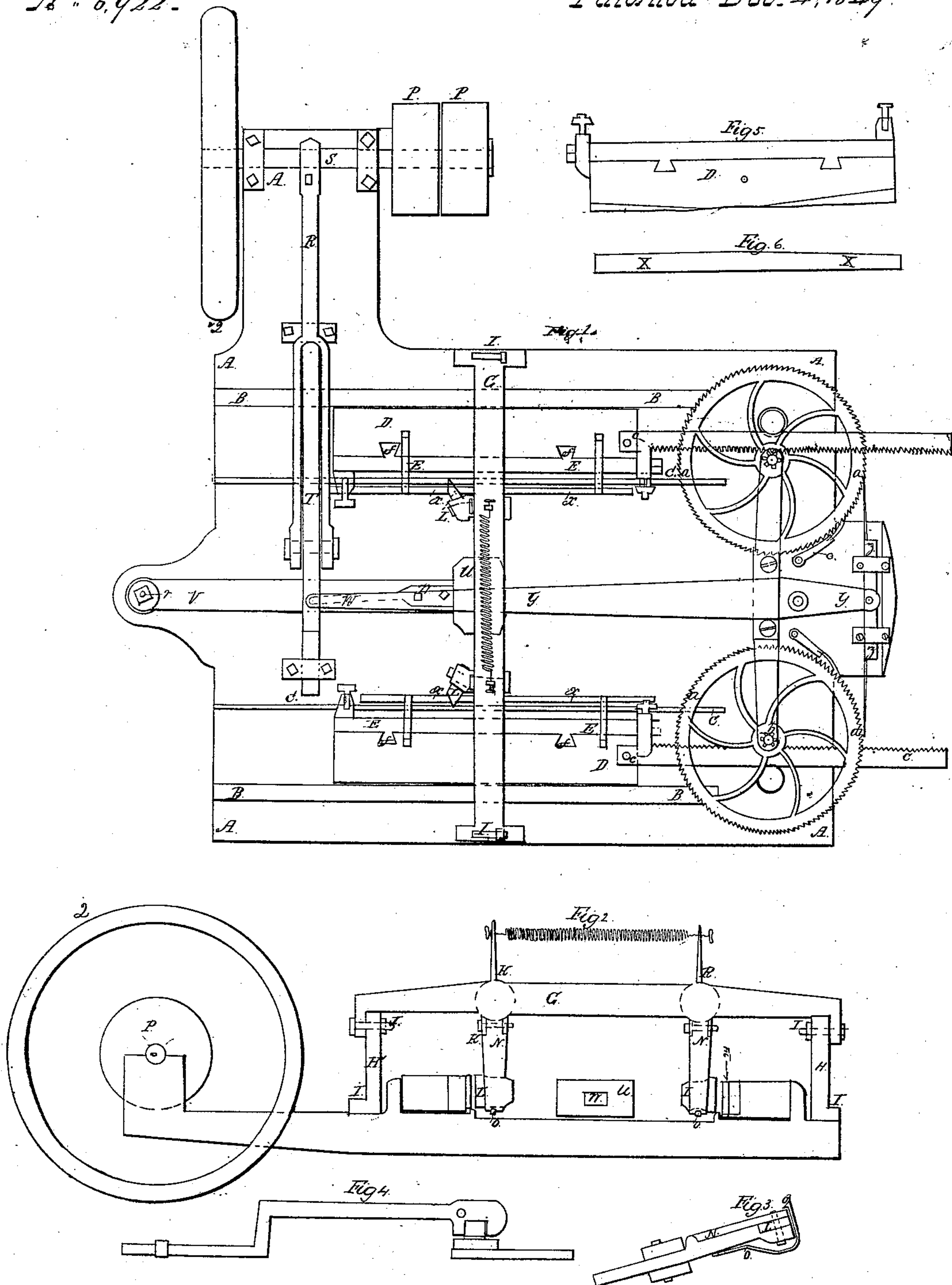


G. Crosby,

File-Cutting Machine,

Patented Dec. 4, 1849.

No. 6,922.



UNITED STATES PATENT OFFICE.

GEO. CROSBY, OF BALTIMORE, MARYLAND; CAMILLUS KIDDER ADMINISTRATOR OF SAID CROSBY, DECEASED.

FILE-CUTTING MACHINE.

Specification of Letters Patent No. 6,922, dated December 16, 1849.

To all whom it may concern:

Be it known that GEORGE CROSBY, late of the city of Baltimore and State of Maryland, deceased, did invent a new and useful improvement in File-Cutting Engines; and as administrator of the late GEORGE CROSBY, deceased, I do hereby declare that the following is a full and exact description of his improvements in file cutting engines, reference being had to the accompanying drawings, making a part of this specification.

The same letters refer to the same parts throughout.

Figure 1 is a ground view of the machine. Fig. 2 is a vertical section of the reversing beam or frame to which the chisels are attached. Fig. 3 is an end section of the stock in which the chisels are held. Fig. 4 is a sliding beam connecting with the crank stock and operating upon the spring of the hammer handle. Fig. 5, top section of the anvil.

This improvement enabled him to cut files of perfectly straight surfaces, or files that swell or taper to each or either end, and also to make the stroke of the chisel from a transverse to an oblique cut, and then by reversing the beam Fig. 2, the chisels are caused to make an opposite oblique cut which produces the diamond cut file.

To construct this machine a substantial cast iron table, is necessary, as shown, A A A A Fig. 1, of suitable size to contain the machinery, upon the top of which are cast four ribs, B B, C C, two on each side of the table, which are placed lengthwise.

D D, are two anvils of cast iron, which are planed and fitted closely between the ribs B, E, E E, a facing of block tin or zinc attached to the anvils by dovetails *f, f, f, f* Fig. 1 for the files to lay against to prevent turning. F, the lip or projection from the anvil for the file to rest upon. The files are held fast to the anvils by screws at each end of the anvils. G, an iron beam extending across the table, and attached at each end to a perpendicular stand H, H, Fig. 2, the top of which is circular in order to reverse the beam G, to any angle that may be required, and to be made stationary at that angle by the screws I, I, as shown in Fig. 2. I I Fig. 1 a slot in the foot of the perpendicular stands H, H, in order to slide them upon the table to bring

the chisel to their proper point, (when the bar is reversed) to be acted upon by the hammer.

K K are two arms fitted into a slot, or mortise through the beam, G, and secured by a pin, on these pins the arms vibrate. These arms extend down from the beam at the same angle that the teeth of the file are to be cut; on the lower end of these arms the chisels L L, are held as in Figs. 2 and 3 by means of a slot or groove in the arms, in which the chisels are closely fitted and secured by a pin through the center of the chisel, on this pin the chisel is allowed to turn and conform to the surface of the file in case one edge of the file should be thicker than the other N N, a clasp on each arm passing down over the face of the chisel, supporting one end of the pin upon which it works, said clasp being held fast to its place by the springs O O, as in Fig. 3 the upper end of the clasp forming a hinge with the arms K K, so that the chisels may be removed the arms K K extending through the beam G forming levers at the top, which are connected together by a strong spiral spring as represented in Fig. 2, which keep the edges of the chisels firmly against the surface of the files, as much so as if held by the natural hand. P P are pulleys, one a tight and the other a loose one.

Q is a balance wheel of 30 lbs weight.

R is a connecting stock or rod, connecting with a crank on the main shaft S Fig. 1, and to the sliding beam P at the other end, as seen Fig. 1.

U is a hammer.

V is the hammer handle which vibrates on a pin at the end (marked V).

W W is a strong spring bolted to the handle of the hammer and runs through a slot made in the inner side of F Fig. 4 and when in motion causes the hammer to strike the chisels, alternately with its pawls, and by this combination of strokes enabling the machine to cut two files at one operation, and the spring yielding to the pressure allows the crank to make its revolution; this spring in conjunction with the spiral spring on the top and in combination with the handle of the hammer holds the chisels firmly against the files not allowing the slightest vibration. This spring being the actual operator of the hammer X X. Check bar placed immediately over the pile

and fixed to the anvil, the said check bar conforms to the shape of the face of the file to be cut, and projecting over the file, receiving and suspending the blow of the hammer when the chisel has cut the depth desired by the handle of the chisel coming in contact with said check bar.

Y Y, is a feeding lever one end being connected with the top of J, and the other end to the sliding pawls Z Z'.

A A are two ratchet wheels with a shaft through them and a small pinion, b b on the lower end of each shaft these fit into ratchets C C, which are attached to the anvil D D, directly opposite the pinions b b, and on the opposite side of the racks are two friction rollers which prevent the racks from springing out of gear when in motion.

e e are double pawls, which are kept against the ratchet wheels a, a, and prevent them from receding when the sliding pawls z z return to renew their hold.

By the combination of the spring with the hammer handle for the purpose of making the blow and preventing the rebound of the chisel, until the crank shall have passed its center, and is ready to make a counter blow, it will be seen at a glance that from the fact of the cranks still revolving, after the blow has been made, and until it passes the center must continue the pressure upon the spring handle, thereby preventing the possibility of a rebound

(which would permit the chisel to change its position on the face of the file), in all other machines heretofore invented, all pressure leaves the moment the blow is made, by either the cam or tappet, leaving the springs to their own voluntary action, which will always have a tendency to vibrate, whether the chisel is acted upon by either the straight or spiral spring, and in case of such vibrations it is impossible to prevent a defective impression on the face of the file. The reversible beam G is for the purpose of making a transverse or oblique cut at any desirable angle, and by reversing the beam to make a perfect "diamond cut" without moving the file from its bed, by said adjustable beam the chisels can be so directed, as to cut file at angles to suit brass or any other kind of work.

Therefore what I claim, as administrator of GEORGE CROSBY, deceased, and desire to secure by Letters Patent, is—

1. The peculiar combination of the spring with the hammer, in the manner and for the purpose, above set forth.

2. The application of a check bar, x, x, for the purpose described.

CAMILLUS KIDDER,
Administrator of George Crosby.

Witnesses:

ROBT. S. MIDDLETON,
ALEXR. H. BROWN.