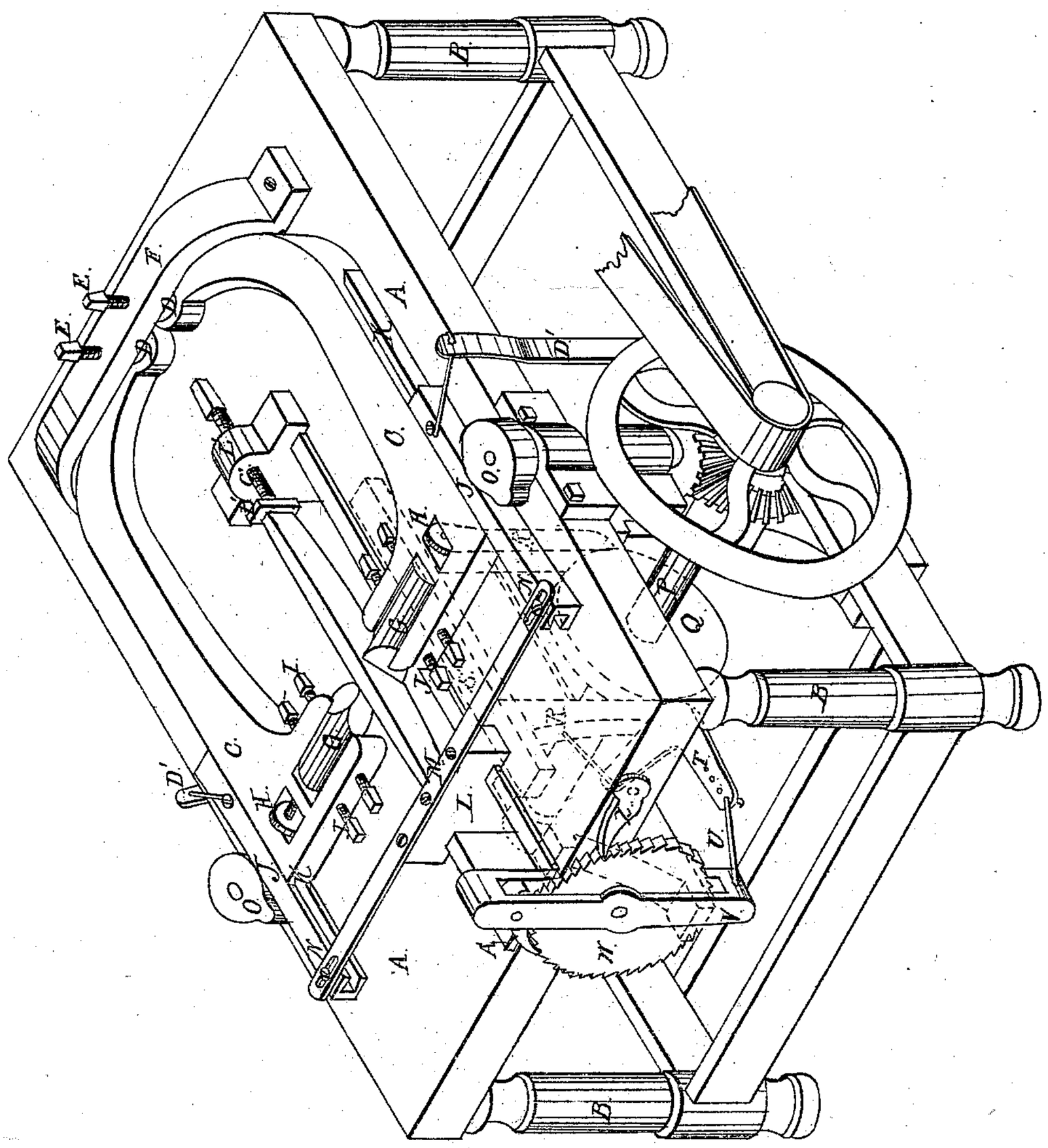
J. C. Blair,

Cutting Files,

No. 8,901. Patented Apr. 27, 1852.



UNITED STATES PATENT OFFICE.

JNO. CUST BLAIR, OF PITTSBURGH, PENNSYLVANIA.

FILE-CUTTING MACHINERY.

Specification of Letters Patent No. 8,901, dated April 27, 1852.

To all whom it may concern:

Be it known that I, JOHN CUST BLAIR, of the city of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in the Construction of a Machine for the Purpose of Cutting Various Kinds of Files; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, and letters marked thereon, forming a part of this specification.

My invention consists in the combination and arrangement of devices for gaging and regulating the depth of the stroke of and guiding the chisels, conformable to the bulge, or curve, of the sides of the blank file, the general arrangement of the respective parts of my machine rendering it more perfect and regular in its action—less liable to get out of order—can be constructed with less expense and will perform the operation of cutting various kinds and forms of files in a more workmanlike manner than any heretofore known or used, as far as I am acquainted.

I effect the regulation of the depth of the stroke of the chisels, conformable to the curved sides of the blank files, by means of guides sliding over dovetailed flanges on the levers, in which the chisels are secured, said guides being counterparts of the curved sides of the blank file, and so connected with the carriage, in which the blank file is secured, that they both move together, so that the two cams, which operate upon the chisels, through the medium of the curved guides, are regulated, in their action, according to the bulge or curve of the file.

In the accompanying drawing A, is the bed plate, or table, supported by the legs B, B, B, formed of cast iron, which sustains the whole machinery; C, C, the two levers, in which the chisels are secured—these levers are at right angles to shafts D, D, and are hung at the hinder end on centers or pivots E, E, which centers are similar to the centers used in nail machines and secured in the iron supports F, F, bolted on the top and beneath the bed plate—thus the fulcrums of the levers are formed, allowing the levers to move, horizontally, free of the bed plate. The chisels G, G, are secured in the jaws of the levers C, C, at any desired angle and degree of adjustment, by the thumb screws H, H, and retained in that adjustment by the set screws I, I.

J, J, are the two guides which slide over dovetailed flanges K, K, formed on the levers, and they are connected together and with one of the head blocks L, of the carriage, in which the blank file is secured, by the metal plate M, which plate is secured to the block L, but jointed to the guides J, J, by having slots in them, as at N, N, so as to give the guides play, on account of their curve, as they slide along with the carriage; or the plate M, may be jointed to the guides by short links, or in any other suitable and, substantially, the same manner to give the guides the desired play.

O, O, are the cams attached to vertical shafts, the lower ends of which shafts are provided with beveled pinions, meshing in other beveled pinions, on the main driving shaft P, by which the desired rotary motion is given to them.

Attached to the main shaft P, is an eccentric wheel Q, which operates upon two arms R, R, projecting down from a slide S, in dotted lines, and moves this slide and arms back and forth at each revolution of the main shaft.

Jointed to one of the arms R, R, is an elbow lever T, which is also jointed, in like manner, by a rod U, to a frame V, in which the ratchet wheel W works, (to which a screw is secured working through a female screw in the head block L, which is for advancing the carriage, in which the blank file is attached,) and to the upper end of the frame V, is jointed a pawl Z, falling into the teeth of the ratchet wheel W, so that when the elbow lever is operated upon by the action of the eccentric wheel on the main shaft, through the medium of the slide and arms, R R, it moves the ratchet wheel one or more teeth which advances the carriage in which the file is secured, accordingly by the screw attached to the ratchet wheel, passing through the block L. The motion of this carriage, of course, can be regulated, as desired, to give any width to the cuts or teeth on the file by moving the rod U along the arm of the elbow lever T at a greater or less distance from the fulcrum so as to move the ratchet wheel any desired number of teeth at each cut of the chisels.

When the carriage has advanced its full length, it can be run out, by throwing off the

pawl A′ (which is for the purpose of retaining the ratchet wheel and carriage while the chisels are operating upon the blank file,) and turning the ratchet wheel by means of a crank, so as to place the blank file in position to be operated upon again by the chisels.

The carriage in which the blank file is secured, consists of two blocks or cross heads L′, L, connected together by rods; in the cross head or block L, is a mortise to receive the tang of the file, and the other end of the file is fitted into a boss B′, the center of which receives the center screw C′.

D′, D′, are two springs, which have the effect to spring the levers and chisels back, after the cams have ceased to act, ready to be acted upon again, after the blank file has advanced the distance of the width of a tooth.

The manner in which I propose to cut half-round files is to place two together with a piece of lead between the flate sides—thick enough to bring them out to a perfect circle. They are secured in the carriage in this manner, by which I am enabled to cut the rounded sides of two files at the same time. With a very little alteration I am also enabled to cut the three sides of three cornered files at the same time.

Having thus fully described my invention for cutting files, I would state that I do not claim a pattern for regulating the depth of the cut of the chisels, but

I do claim—

The combination of the pattern located between the cam and the chisel carriage, in the manner herein described, with said cam and carriage and the file carriage, by which the pattern is moved, the whole arranged and operating substantially in manner and for the purpose set forth.

In testimony whereof I have hereunto signed my name before two subscribing witnesses.

JOHN CUST BLAIR.

Witnesses:

THOS. STEEL,

JAS. ROBINSON.