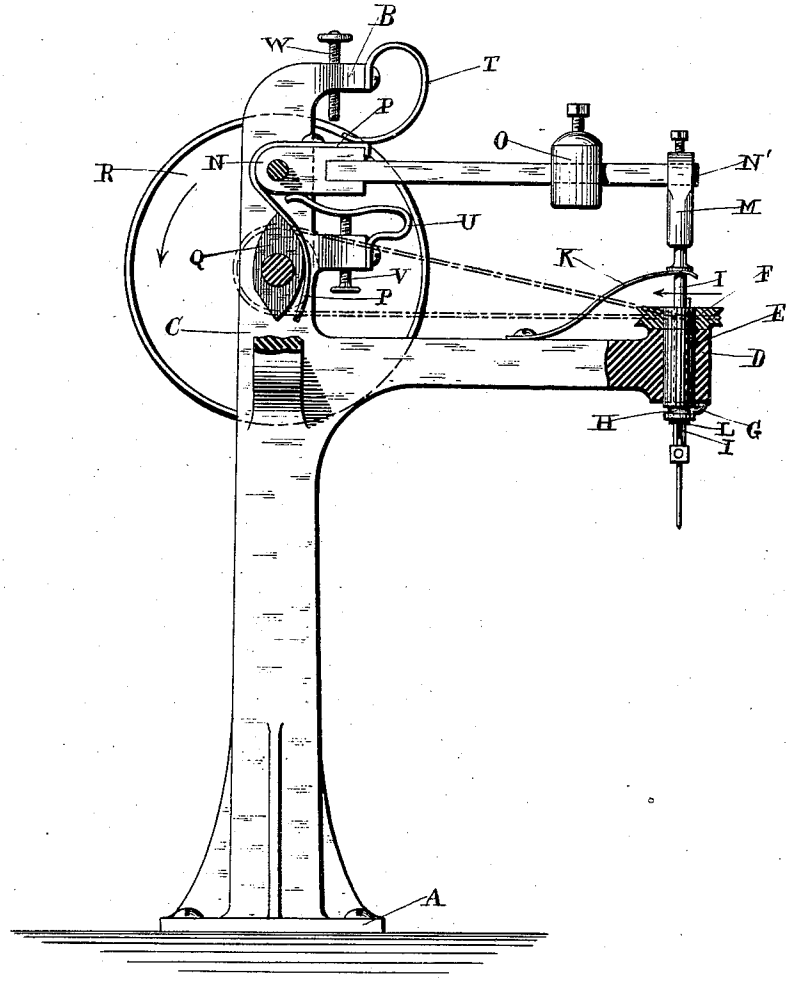
(No Model.)

L. T. CARR.

CHASING AND ENGRAVING MACHINE.

No. 254,090. Patented Feb. 21, 1882.



WITNESSES.

Joseph H. Perkins

Hattie A. Wiley

INVENTOR.

Lewis T. Carr

by D. M. Small,

atty,

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

LEWIS T. CARR, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO GODFREY & GARDINER, OF SAME PLACE.

CHASING AND ENGRAVING MACHINE.

SPECIFICATION forming part of Letters Patent No. 254,090, dated February 21, 1882.

Application filed March 29, 1881. (No model.)

To all whom it may concern:

Be it known that I, LEWIS T. CARR, of Providence, county of Providence, and State of Rhode Island, have invented a new and useful Machine for Chasing or Engraving Metal, &c., by which the "filling in," "matting," or "Swiss frosting," as it is variously termed, can be done much more rapidly than by hand and in a superior manner, being adapted to all kinds of work, light or heavy.

Experience has taught that a sharp, quick, springing clip on the chasing-tool is essential to fine work—such a clip as is produced by a hammer in the hands of a skillful chaser; that the lighter the work the lighter the hammer required, and that it is better to rotate the chasing-tool while the clip is being made.

My machine is constructed on the principles as illustrated in the accompanying drawing, which forms a part of this specification, and which represents a side elevation of a machine complete, showing all of its parts.

A B C D is the frame, which is secured to the table or bench at A. Through the outer end of the arm C D there is a perpendicular socket, within which the hollow spindle E, attached to the small wheel F, is free to revolve, being kept from springing or bounding up by a little piece, G, the end of which extends within a groove, H, in the spindle E.

I is another spindle, free to play up and down within the spindle E, though revolving with it, being held in position by a spring, K, and a little shoulder or its equivalent at L, which latter prevents it from rising any higher.

Within the spindle I, at its lower end, is inserted the chasing-tool, and secured therein in the same manner as the needle of a sewing-machine.

M is the head of a hammer, with which the blow is made upon the spindle I, and can be solidly attached to the handle N N′ or made removable, so that heads of different weight can be used for different work. The weight of the hammer, however, is better, more conveniently, and cheaply regulated by means of a weight, O, which can be moved along the handle, nearer or farther from the head, as required. One end of the handle is secured to the frame at N, so as to leave the other end free to rise and fall.

P P is a spring-lever fastened to the handle, and extending down so as to come in contact with an oblong cam, Q, which is attached to the same shaft as the drive-wheel R. As the shaft revolves, each end of the cam Q successively pushes forward and raises the lower end of the spring-lever P P, alternately raising the hammer-head and letting it fall.

The object of a spring-lever is to modify, by its yielding a little, the action of the cam, permitting the length of the upward stroke of the hammer to be varied as required, and to prevent a dead stroke, such as would be produced by the cam striking against a solid one, unless the cam itself were free to give a little on the shaft by means of a spring or cushion of some sort, which would be an equivalent, though not as desirable.

The position of the lever P P, whether a spring or otherwise, can be varied to extend on a line with or above the handle N N′, the position of the cam or wipes being correspondingly changed, though the position represented is as good as need be. In order that the stroke may not be obstructed by the cam Q, it is better to make it as represented in the drawing, with one of the opposite sides of each end rounded, the other side of each end flattened. As the shaft revolves in the line indicated by the arrow each of the rounded ends of the cam strikes the lever successively, making less of a thud than when not rounded, and after passing a certain point the spring flies back onto the flattened side, allowing the hammer to make a sharp, quick stroke.

A wheel with more than two arms or a single wipe could be used as an equivalent for the cam Q, which, however, in actual practice, is far preferable.

To assist in quickening and sharpening the downward stroke, I use a spring which can be applied in a variety of ways; but the spring I, as represented in the drawing, pressing down upon the handle is both simple and effective.

The spring U is used to prevent a lingering stroke, and, in connection with the thumb-screw V, assists in regulating or varying it as

needed for different kinds of work. The thumb-screw W also helps to regulate the power of the stroke by shortening or lengthening it.

Coiled springs or rubber cushions could be used as equivalents for the springs T, U, and K, though not as desirable.

On the same shaft with the driving-wheel R there is fixed a little wheel, as indicated by the dotted lines. In use this is on the front side of the arm, a portion of which has been broken away to show the cam Q. A band connects this wheel and the wheel F, by means of which the chasing-tool is rotated during the stroke of the hammer.

Both hands of the operator are left free to hold and move, as required, the work to be chased or engraved.

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

1. In a chasing and engraving machine, the combination of the spindle I, spring K, and thumb-screws V and W with the combined cam and spring actuated hammer N N′, substantially as described.

2. In a chasing and engraving machine, the combination of the spindle I, spring K, and thumb-screw V with the combined cam and spring actuated hammer N N′, substantially as set forth.

3. In a chasing and engraving machine, the combination of the spindle I, spring K, and thumb-screw W with the combined cam and spring actuated hammer N N′, substantially as described.

4. In a chasing or engraving machine, springs K and U and thumb-screw V, arranged to operate substantially as set forth.

5. In a chasing or engraving machine, springs K and T and thumb-screw W, arranged to operate substantially as set forth.

6. In a chasing or engraving machine, the spindle I, spring K, and thumb-screw V, arranged to operate substantially as set forth.

7. In a chasing or engraving machine, the spindle I, spring K, and thumb-screws V and W with the combined cam and spring actuated hammer N N′, together with a device for rotating the tool, all substantially as described.

LEWIS T. CARR.

Witnesses:
DEXTER M. SMALL,
JOSEPH H. PERKINS.