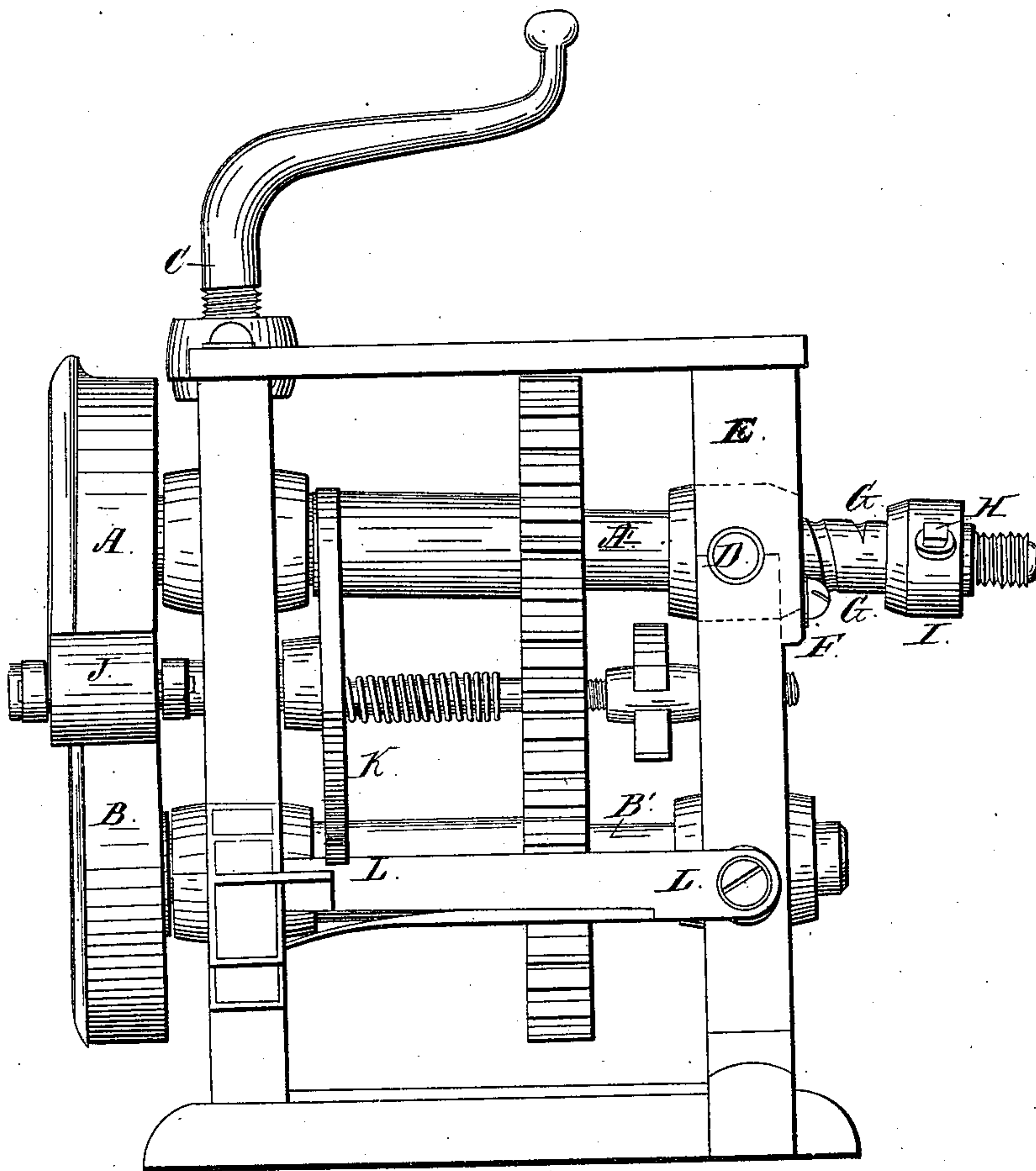


A. W. Whitney,

Sheet-Metal Roller-Tool.

N^o 5,389.

Patented Dec. 11, 1847.



UNITED STATES PATENT OFFICE.

A. W. WHITNEY, OF WOODSTOCK, VERMONT.

IMPROVEMENT IN MACHINERY FOR WORKING SHEET-IRON, &c.

Specification forming part of Letters Patent No. 5,389, dated December 11, 1847.

To all whom it may concern:

Be it known that I, A. W. WHITNEY, of Woodstock, in the county of Windsor and State of Vermont, have invented new and useful improvements in the manner of constructing certain of the machines which are consecutively used in the manufacturing of articles made of tin-plate and of other sheet metal; and I do hereby declare that the following is a full and exact description thereof.

The machines to which I refer are of that kind that have two revolving shafts, which are placed one above the other, and at their fore ends carry steel rollers or dies for operating on the article which is being manufactured. In several of these machines the steel rollers or dies have to be adjusted either vertically or horizontally, or both—such, for example, as those known under the name of “wiring-machines,” “turning-machines,” “burring-machines,” and “beading-machines.”

A part of my improvements consist in a new manner of making the requisite adjustments of the upper shaft and its die, as shown in the accompanying drawing, which represents a wiring-machine drawn on a scale of three-fourths of an inch to the inch. The difference in this machine and in the others herein named consists in the form given to the rollers or dies, so as to adapt them to the particular office that they are to perform, which rollers or dies may be changed at pleasure.

A is the upper and B the lower roller or die, and A' B' their shafts. The boxes in which the shaft of the lower die runs are stationary; but as the upper die is to be raised from the lower to admit the article that it is to operate upon, and to adapt it to the thickness of the metal or to the size of the wire that is to pass between them, the fore die of the upper shaft is made to slide up and down between the cheeks of the frame. When the screw C is turned back, this upper die is raised by means of a spiral spring placed between the two dies, and by turning the screw forward it is forced down to its proper place for action. So far these machines do not differ from those in general use; but in the rear box of the upper shaft I have made an important improvement. In the machines heretofore used, the bearing of the rear axle in this box was filed away, so as to enable the opposite end to be raised, and it was consequently liable to wear, and was

otherwise objectionable. This box I now make to vibrate upon gudgeons or centers, instead of allowing it to vibrate loosely within the box. One of these gudgeons is seen at D passing through the cheek of the frame, the upper portion, E, of which may be made in a separate piece from the lower, and attached thereto by a screw, F; or the gudgeons or centers may be fixed in other ways, allowing a free vibration or rocking motion of the box. Under this arrangement the wheel or die A may be raised to a sufficient height and again lowered by the action of the screw C, while the rear gudgeon fits closely in its box, thus accommodating the accurate vertical adjustment of the die A to the die B.

My next improvement consists in the manner of governing the horizontal adjustment of the upper shaft and its die—that is to say, of regulating the position of the upper die over the lower when it is required to move it forward or backward to adapt it to the size of wire in the operation of wiring, or for any other purpose requiring such adjustment—and this I effect in the following manner: On the rear end of the upper shaft, A, I form a shallow spiral groove, G G, into which the end of a set-screw, H, passing through a collar or collet, I, is to be received. This collar is represented in the drawing as moved back out of its place for the purpose of showing the spiral groove G; but when in place its inner end bears against the vibrating box and forms a shoulder, which determines the advance of the shaft, and thus accommodates the longitudinal adjustment of the die A to the die B. By slightly loosening the set-screw H the collet I may be turned round, so as to cause the shaft A and its die A to be moved backward or forward with the greatest precision, the point of the screw being still retained in the groove. This spiral groove is essential to the required adjustment, not only to the precision with which it may be made, but in fact to the whole use of the collar, as the tightening of the set-screw without the spiral groove must be made with a degree of force that would indent the shaft and render the adjustment impossible. When the point of the screw is within the spiral groove, it will keep in place without its being necessary to use any considerative force in fixing it.

In the passing of the wire between the rollers or dies when wiring is to be effected, a

guide or forming roller, J, is used, which serves to give to the wire the proper curvature. This guide-roller may be set higher or lower, to adapt it to use. It has been usually tightened or held in place by means of a thumb-screw, which is not, however, to be depended on, as the guide-roller is apt to be forced out of its place. To obviate this difficulty I affix a sector-ratch, K, on the arbor on which the guide-roller turns, and on the periphery of this I make notches, into which the angular edge of a spring-latch, L, is forced, and this effectually holds the guide-roller in place, while it is easily shifted by the forcing down of the spring-latch.

Having thus fully described such parts of the machinery used in the manufacturing of tin-plate and other sheet-metal ware as constitute my improvements, or as are necessary to an understanding thereof, I do not claim the vibrat-

ing or rocking box, nor its pivot D, nor the collar I with its set-screw, nor the sector-ratch K, nor spring-latch L, abstractly or unconnected with this machine; but

What I do claim as original, and desire to secure by Letters Patent, is—

1. The combination of the rocking box D, the collar and set-screw I H, and the spiral groove G, with the two shafts, and circular dies A B, arranged and connected as herein described, for working tin, iron, or copper plates.

2. The combination of the sector-ratch K and spring-latch L with the guide-roller J, in the manner and for the purpose herein set forth.

A. W. WHITNEY.

Witnesses:

THOS. P. JONES,
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