2 Sheets--Sheet 1.

H. THOMAS.

Carving-Machines.

No. 139,980. Patented June 17, 1873.

Fig. 1.

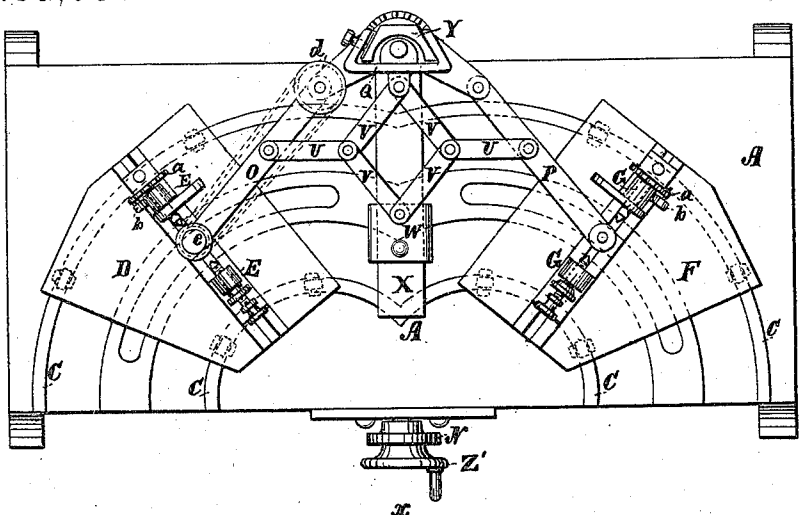


Fig. 2.

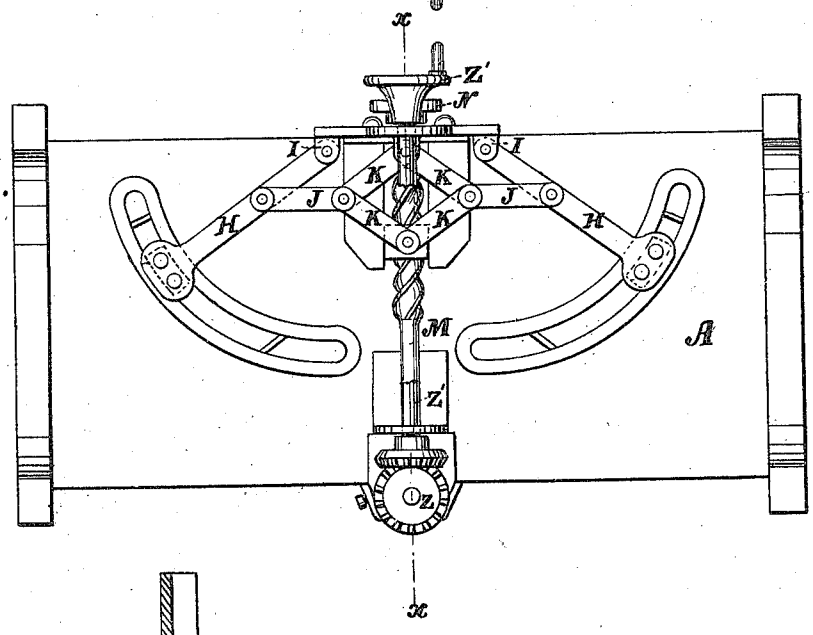
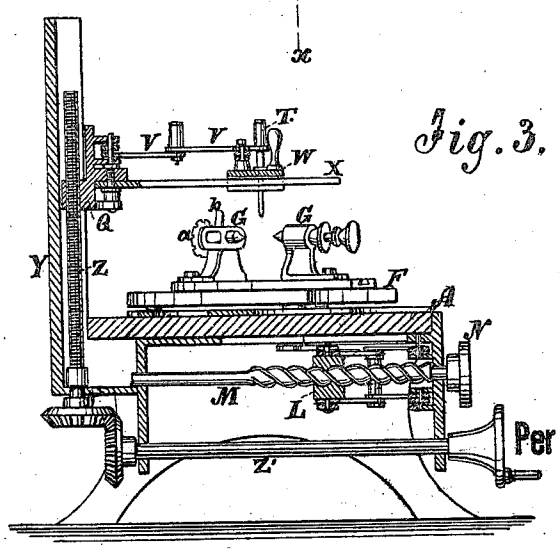


Fig. 3.



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2 Sheets--Sheet 2.

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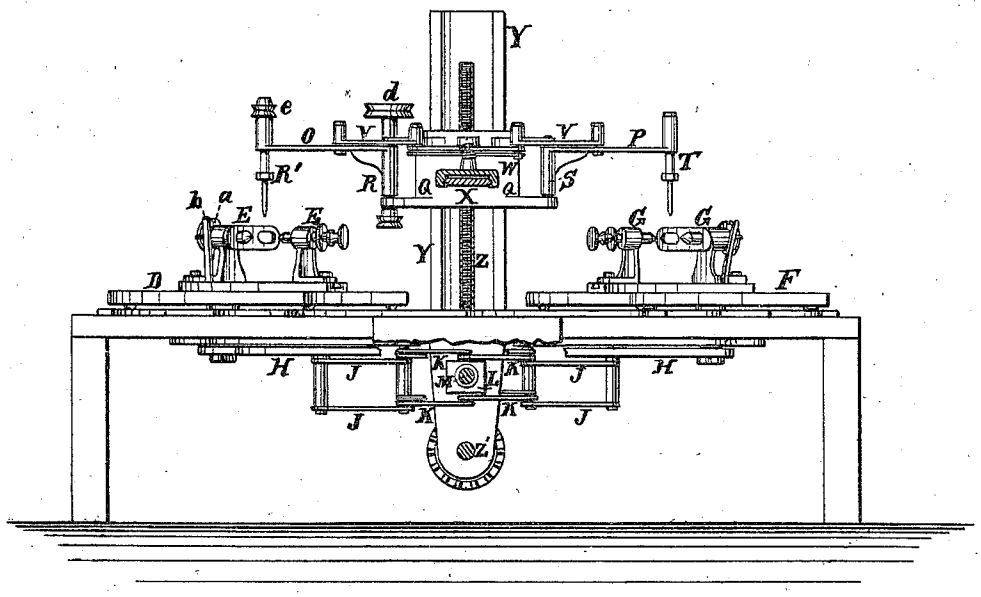
Fig. 4.



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UNITED STATES PATENT OFFICE.

HENRI THOMAS, OF BROOKLYN, E. D., NEW YORK.

IMPROVEMENT IN CARVING-MACHINES.

Specification forming part of Letters Patent No. **139,980**, dated June 17, 1873; application filed April 19, 1873.

To all whom it may concern:

Be it known that I, HENRI THOMAS, of Brooklyn, E. D., in the county of Kings and State of New York, have invented a new and useful Improvement in Carving-Machines, of which the following is a specification:

In my improved carving-machine two centering holders are employed, one for holding the pattern and the other the work, on sliding beds arranged on quarter-circular ways on the top of the table, which meet each other at the middle of the back of the table, and diverge therefrom to the front side; and above these are the tool and guide or dictator, which hangs vertically from their supports in the free ends of horizontal arms which are pivoted to a block over the table near where the ways of the holders meet, in such an arrangement that they traverse the work and pattern in the longitudinal axes of the center holders, and the work and pattern traverse the paths in which the tool and guide swing, so that the requisite motions are obtained for the tools to act on all parts of any surface in the holders. Different sides or surfaces are presented by turning the work and pattern in the holding centers. The block to which the pattern and tool-arms are pivoted is made to slide vertically on a support, with a screw under the control of the operator; the arms of the tool and guide are also at the control of the attendant by means of a sliding block to which they are connected, for being swung to move the tools, as required in the progress of the work; and the bed-plates of the center-holders are caused to swing forward and backward on their ways by a hand-screw and a traversing nut, to which they are suitably connected.

Figure 1 is a plan view of my improved carving-machine. Fig. 2 is a plan of the bottom of it. Fig. 3 is a transverse section taken on the line *x x*, of Fig. 2, and Fig. 4 is a front elevation, with some parts sectioned.

Similar letters of reference indicate corresponding parts.

A represents the bench-top on which are the circular ways C, comprising about a quarter of a circle each; they begin at the front of the table at each side of the center, and meet together at the other ends on the transverse center of the table near the back side. D represents the bed-plate of the work-holding centers E. F is the bed-plate of the pattern-holding centers G. These holders are arranged on their respective ways so that they radiate to a central point at the front of the middle of the table where the attendant stands. As the platforms swing forward and back on the ways, they are actuated by the radius bars H below the table, pivoted at I, and connected by links J, and toggle-bars K, with the nut L, on the adjusting-screw M, which extends to the front of the machine, and has a hand-wheel, N, thereat, by which to turn it and work the holders alike. O is the tool-carrying arm. P is the guide or dictator-arm; the first is pivoted to the vertically adjusting-block Q, at R, so as to swing the tool-spindle R′ forward and backward across the path of the work-carrying centers E; the other is pivoted to said block at S, to swing across the path of the pattern-carrying centers G G, for moving the dictators T over the pattern. These arms are connected by links U, and toggle-jointed bars V, to the slide W, on the bar X, projecting from the block Q towards the front of the machine, so that the operator can conveniently actuate the slide W by hand to swing both arms exactly alike. The block Q is fitted on the vertical support Y to slide up and down to adjust the tools vertically to the work and pattern, and is actuated by the feed-screw Z, which gears with the hand crank-shaft Z′ below the table. The pattern and the work are turned by the centers from time to time to shift the faces to the tools, and they are held by the templates *a* and spring-holders *b*.

It will be seen that, by the movement of the center-holders and the tool-carrying arms, the tools can be brought to all parts of the surfaces of the work and pattern in the most ready manner, and by the vertical adjustment all the changes necessary on account of variation in the height of the pattern can be easily accomplished.

All these changes are made by the hand-wheel N, crank-shaft Z′, or the slide W, which are grouped at the front of the table, where the operator can, with greatest convenience, watch the patterns and adjust the tools as required. The tool-spindle is to be revolved by a belt

working from a pulley at *d* onto the pulley *e* on the spindle, the pulley *d* to be turned in any suitable or approved way.

It will be noted that the work produced will be in reverse of the pattern—that is to say, the parts on the right-hand side of the pattern will be represented on the left-hand side of the work, and vice versa.

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

1. The combination of the sliding work and pattern carrying centers, and the vertically adjustable and horizontally swinging tool-carrying arms, all constructed and arranged and operating substantially as specified.

2. The center holder-plates D F, radius-bars H, links J, toggle-jointed bars K, sliding nut L, and screw M, combined and arranged substantially as specified.

3. The arms O P, block Q, bar X, slide W, bars V, and link U, combined and arranged substantially as specified.

4. The sliding-block Q, standard Y, arms O P, and their actuating devices, and the adjusting-screw Z, and crank-shaft Z′, combined with the work and pattern centers, substantially as specified.

HENRI THOMAS.

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