E. Webber,

Turning Irregular Forms.

No. 15,310. Patented July 8, 1856.

Fig: 1.

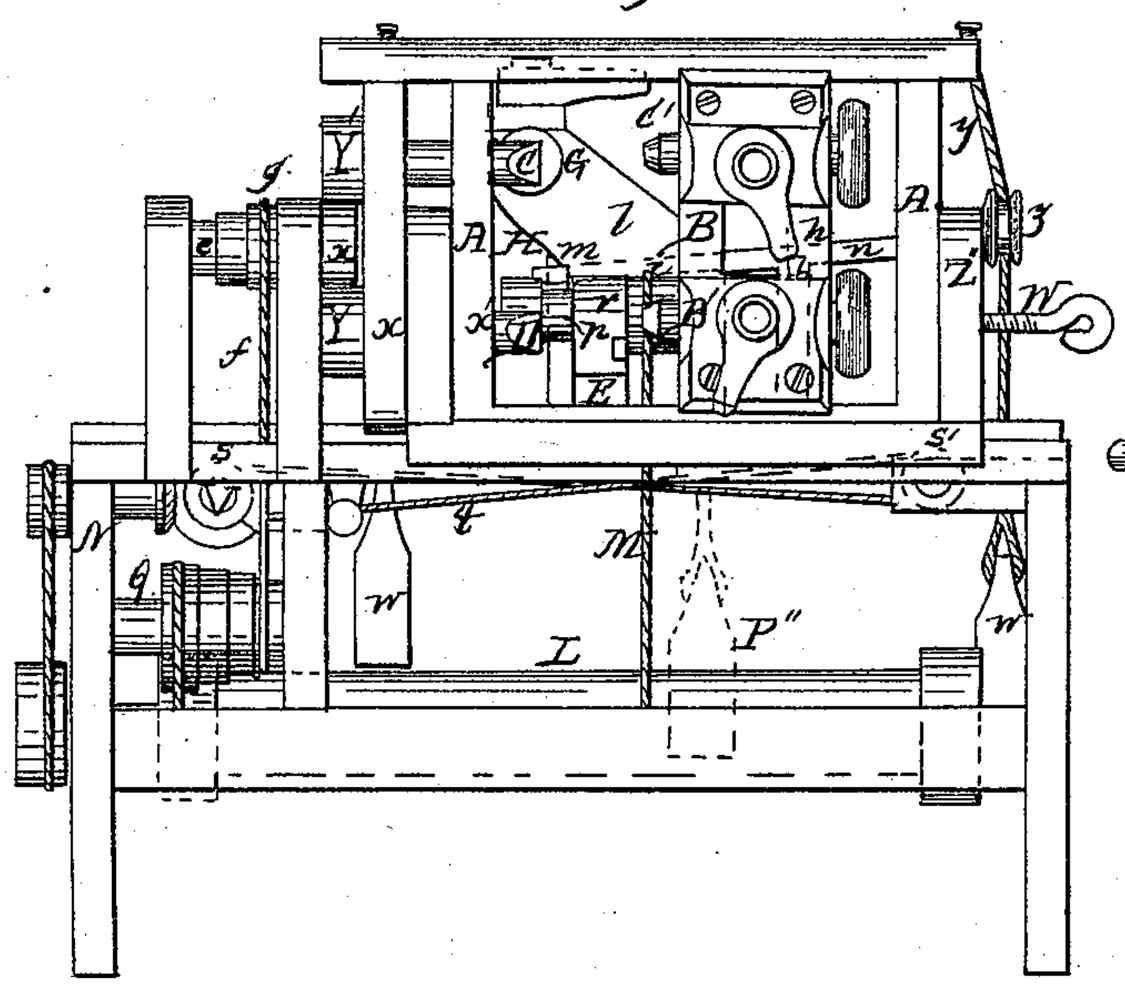


Fig: 2.

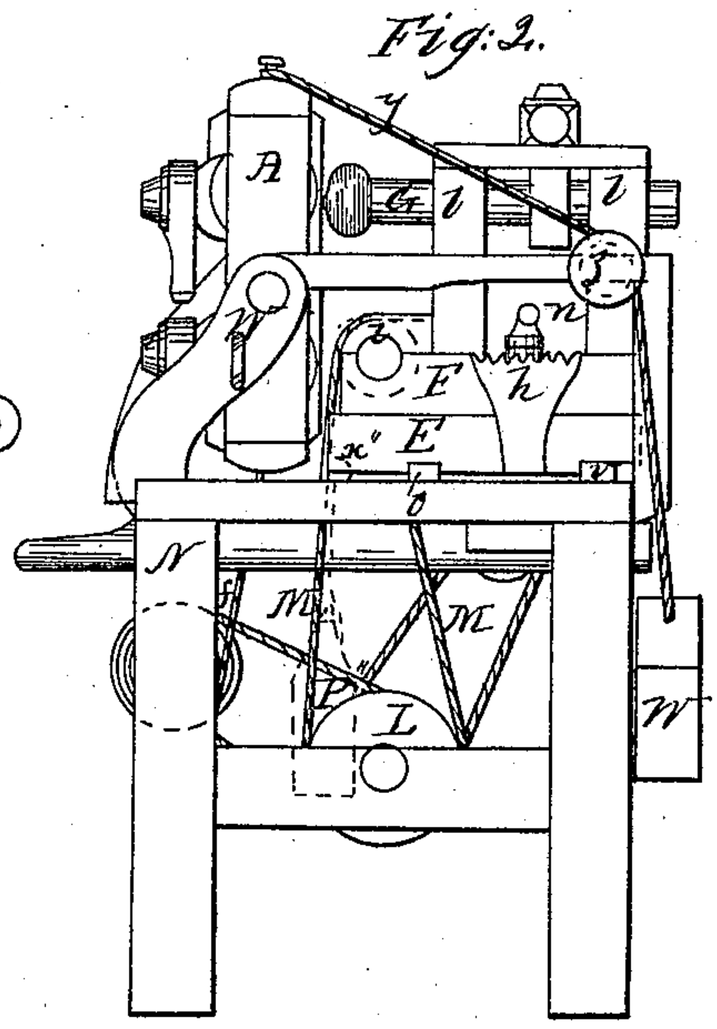
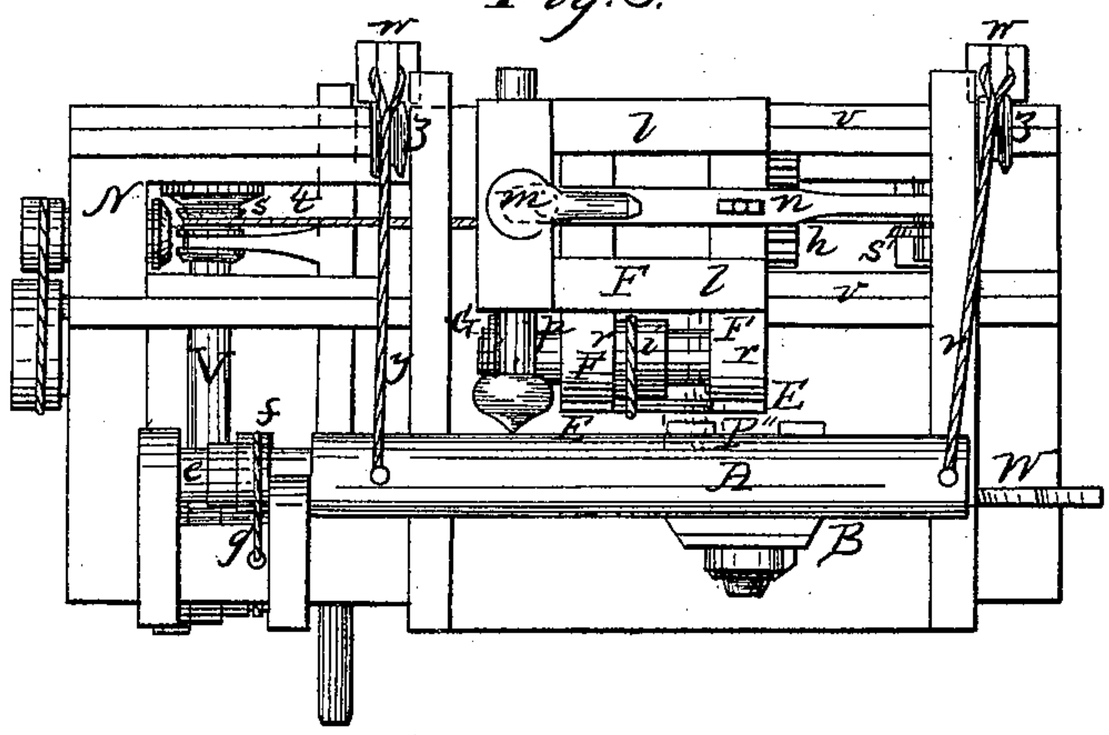


Fig: 3.



UNITED STATES PATENT OFFICE.

ELBRIDGE WEBBER, OF GARDINER, MAINE.

TURNING-MACHINE.

Specification of Letters Patent No. 15,310, dated July 8, 1856.

To all whom it may concern:

Be it known that I, ELBRIDGE WEBBER, of Gardiner, in the county of Kennebec and State or Maine, have invented a new and useful Improvement in Machinery for Turning Heads and Shafts of Shovel-Handles and other Irregular Forms; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, forming part of this specification, in which—

Figure 1 is a side elevation and Fig. 2 is an end elevation of the machine. Fig. 3 is a plan view of machine.

Similar characters of reference in the several figures denote the same part of the machine.

The nature of my invention conisists in the peculiar construction of the machine, whereby the turning and pattern centers, and the cutter carriage, are susceptible of certain relative adjustments which render the machine capable of turning from a pattern of like form, or a reverse, as may be desired.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation.

In the drawing A is a frame, suspended from the standards Z Z′, and capable of movement about the points of suspension, within the frame A, and movable in direction of its length, is the sliding frame B which carries the centers C′ D′ for securing the pattern and the article to be turned; the center pins C and D pass through the pieces X X′, which constitute one of the sides of the frame A. On the portions of the pins C and D exterior to the frame A are cog wheels, Y Y′, which mesh into the wheel X, and by rotation thus produced, give motion to the pattern and piece of wood to be turned. From the top of the frame A run the cord *y*, which pass over the pulleys X X, and have weight W fastened to their lower extremities. Through the standard Z′ passes the screw W, so as to enter the frame A when it is in a vertical position, and so secure it, the said frame being free to vibrate when the screw is withdrawn, and immovably secured in a vertical position when the screw is inserted.

Resting in the guides *v* is the carriage E, which is movable longitudinally by means of the chain or cord *t*, which being fastened to the under side of the carriage and passing over the sheaves S, S′ will draw the carriage as the shaft V is rotated.

The upper portion of the carriage E forms ways or guides for the cutter carriage F, which is composed of two cheeks *r r′* across which rests the shaft P having on its extremity the cutter wheel H. On one side of the carriage F arise the oblique standards *l l*, through which runs the gage rod G consisting of a rod with a large head, in the extremity of which may be inserted a ball for diminishing friction between the gage rod and pattern. On one side of the carriage E arises the standard M to the head of which is attached a lever *n* for moving the carriage F on its ways; the lever being slotted and working on a pin in the frame of the carriage F. The ratchet *h* on the carriage E serves to hold the lever in any given position and thus secure the cutter carriage.

Upon the shaft *p* is a pulley *i*, over which and the drum L passes a band M which gives motion to the cutter wheel H. The band *f* from the shaft Q, to the pulley *g* on the shaft *e*, produces the rotation of the pattern and article to be turned. The whole of the several parts constituting this machine are supported in the frame N, and may be varied in many details, as may be discovered by practice.

The operation of my improved machine for turning irregular forms is as follows: The pattern is secured between the upper pair of centers contained in the frame A, and the material to be turned secured between the lower pair. If the turning is to be performed from a reverse form or pattern, the frame A is left free to vibrate, the cutter carriage is run toward it and the protrusion of the gage rod G regulated, so that the reverse form shall always press against its head; the weight *w* by keeping the upper portion of the frame A drawn back will insure a constant contact between the reverse form and the head of the gage rod C. Motion being given to the main shaft, the cutter wheel H, the reverse form, and the material to be turned are all rotated by reason of the connection of bands and pulleys above described; the gradual movement of the carriage E in the guide V causing the cutters to act upon the entire length of the piece to be turned. As the chain *t* is crossed and its two portions run

in opposite directions, if the attachment of the portion which has drawn the carriage to its extent in one direction be cast loose from the bottom of the carriage, and the other portion be fastened in its place; then when the mechanism moving the carriage is again placed in gear, it will traverse in the opposite direction; the band M slipping on the drum I, during the movement of the carriage E. In this manner the operation continues until the article is finished, the swinging frame A causing an effectual action of the cutters on the piece to be turned corresponding to the elevation or depressions of the reverse form; its suspension rendering it exceedingly sensitive to the inequalities of the reverse form, as the slightest change in surface will produce a corresponding effect in the presentation to the cutter of the material acted upon; rendering the machine far more effective in its operation than other machines of like character constructed upon different principles.

When it is desired to turn from a fac-simile pattern, the frame A is fastened in a vertical position by the screw W, and the cutter carriage left free to move by the removal of lever *n* from the ratchet *h*. A weight P″ is then hung to the front of the cutter carriage, its cord passing over the roller *x″* of the carriage E. This keeps the gage rod up against the pattern, and moving its carriage as it follows the inequalities of the pattern causes the cutter to impart to the piece suspended on the lower centers the same form as the pattern, the carriage E moving as before described.

I do not claim turning from a reverse pattern by suspending the pattern and turning centers in a vibrating frame. Nor, do I claim turning from a fac-simile pattern by means of a movable cutter carriage; but

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

The arrangement of the frame, containing the pattern and turning centers, relative to the gage rod and cutter carriage, as herein described, whereby the said frame may be fixed and the carriage movable, or the reverse, so that either a fac-simile or a reverse pattern may be used without any change in the machine.

ELBRIDGE WEBBER.

Witnesses:
JOSEPH M. MESERVE,
GEO. W. WAILL.