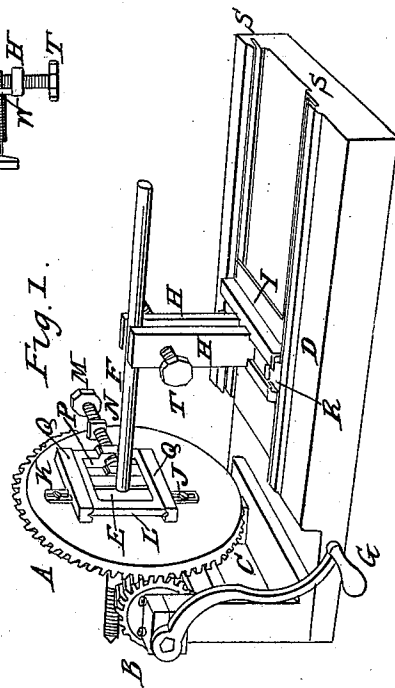
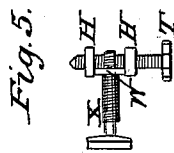
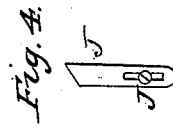
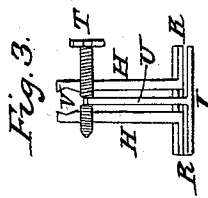
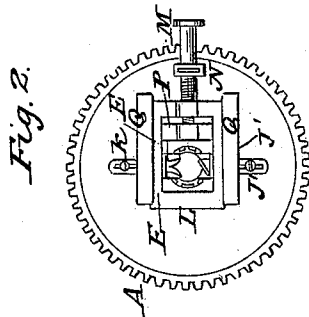


P. H. WATSON.
Screw Threading Machine.

No. 4,868.

Patented Dec. 3, 1846.



UNITED STATES PATENT OFFICE.

PETER H. WATSON, OF ROCKFORD, ILLINOIS.

MACHINERY FOR CUTTING SCREWS.

Specification of Letters Patent No. 4,868, dated December 3, 1846.

To all whom it may concern:

Be it known that I, PETER H. WATSON, of the town of Rockford, in the county of Winnebago and State of Illinois, have invented a new and useful Improvement in Machines for Cutting Screws, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a perspective view of the machine as arranged for cutting a male screw upon a rod of metal. Fig. 2 is a view of the face of the beveled cog wheel carrying the dies, cutter and rest, &c. Fig. 3 is a vertical transverse section of the carriage and jaws for holding the material to be operated on. Fig. 4 is plan of the cutter. Fig. 5 is a plan of the tap in the act of cutting the thread in a nut.

The nature of this invention and improvement consists in combining and arranging in a suitable frame certain known mechanical principles in such a way as to form a new and useful machine which will enable the mechanic to make screws and nuts with greater despatch and correctness than by the modes now in use.

The combination consists of a cog wheel A and pinion B working into the same supported by suitable frame work C, on a permanent bed D—said cog wheel having attached to its face two sliding dies E E of the usual form for indenting the screw on the rod of iron F said dies being turned with said cog wheel which is caused to revolve by turning a crank G on the axle of the pinion B while the rod of iron F is held in a horizontal position between two vertical parallel jaws H attached to a sliding carriage I moved in parallel grooves S in the bed toward the dies by the draft of the dies and chaser on the rod in cutting the thread which passes through the hub of the wheel, made hollow for that purpose, the screw being perfected and finished before passing through the opening in the center of the wheel by means of an adjustable cutter or chaser J of a shape corresponding to that of the thread to be cut, attached to the face of the wheel, between the dies and the wheel and directly behind the dies and in a position to bring the cutter or chaser in contact with the thread as marked by the dies so as to cut and perfect it as it leaves the dies—said cutter being attached to the face of the wheel by a set screw J' passing through an

oblong mortise in its shank. A forked rest K is connected to the cog wheel in the same manner as the cutter so as to bear against the screw on the side opposite to that where the cutter is placed being designed to support the screw while under the operation of the chaser or cutter.

The dies are contained in and supported by a sliding frame L and are moved by a right and left screw M attached by a collar to a stud N inserted into the face of the wheel turned by a milled head, or other means without changing its position longitudinally, the right thread working in a female head in the middle of the top of said sliding frame L and the left thread in a female thread in the middle of the sliding follower which slides in the sliding frame—the lower die being placed against the bottom of the sliding frame, and the upper die against the under side of the follower P so that when said screw is turned it causes the dies to approach or recede from, each other simultaneously, by giving the follower and bottom of the frame similar movements in opposite directions.

The inner sides of the frame are made of a V shape to enter correspondingly shaped grooves in the ends of the die plates and follower. The outsides of the sliding frame are similarly shaped to slide in corresponding grooves made on the under sides of parallel ribs Q fastened to the face of the wheel. This arrangement is adopted for the purpose of adapting the dies to various diameters of rods upon which screws are to be made, and for centering the dies and rod. The jaws for holding the rod of iron on which the screw is to be cut consists of two vertical parallel plates H H notched or recessed on their inner sides where they grip or clamp the rod F having their lower ends turned at right angles to enter and slide back and forth in parallel grooves R R on the upper side of the sliding carriage I at right angles to the grooves S in the bed in which the carriage I moves. These jaws are opened or closed by means of a right and left horizontal screw T turned in corresponding right and left female screws in the jaws H H, said screw being prevented from changing its position longitudinally by attaching it to the head of a post U inserted into the carriage I by a suitable neck V formed in the middle of the screw between the right and left threads, said neck turning

in a corresponding box fixed in the head of the post U. By turning this screw the jaws will be moved simultaneously in opposite directions.

5 When a nut is required to be made the piece of iron W to form the same must be held between the jaws H H instead of the rod and a tap X with a T head such as that represented at Fig. 5 must be placed be-
10 tween the dies—then by inserting the tapered end of the tap into the hole in the center of the piece of iron to form the nut and turning the crank axle G the thread will be cut by the said tap.

15 The frame C containing the cog wheel and pinion may be made to revolve horizontally on a pivot or center and the cog wheel may

be made the driver and the pinion the carrier of the cutting tools and dies—especially in cutting screws of small diameter where 20 speed is required.

What I claim as my invention and desire to secure by Letters Patent is—

The combination of the right and left screw and sliding frame, with the dies for 25 the purpose of centering, feeding, marking and smoothing the bolt while the screw is being cut upon it by the chaser—the whole being arranged and operated in the manner herein set forth.

P. H. WATSON.

Witnesses:

WM. P. ELLIOT,
J. FRANCIS MAHER.