

T. J. SLOAN.

MACHINES FOR CUTTING SLOPED NICKS IN WOOD SCREWS.

No. 180,280.

Patented July 25, 1876

Fig. 1.

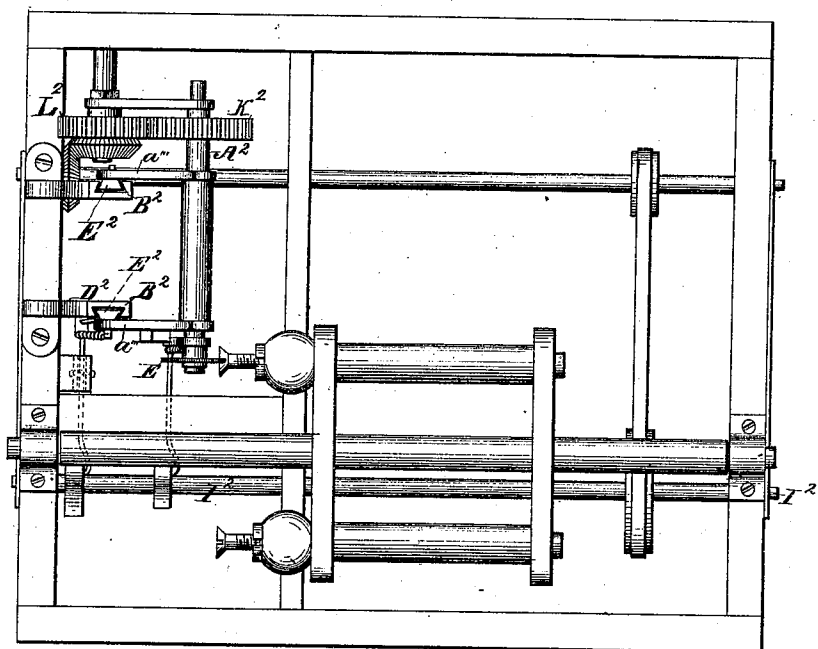


Fig. 2.

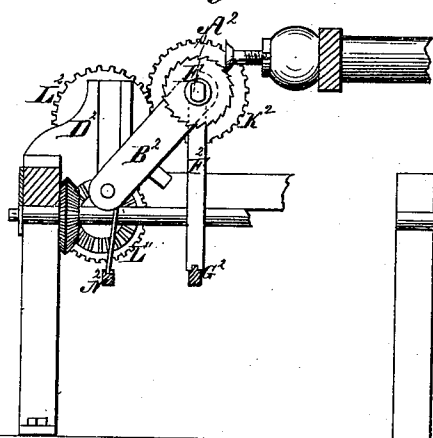
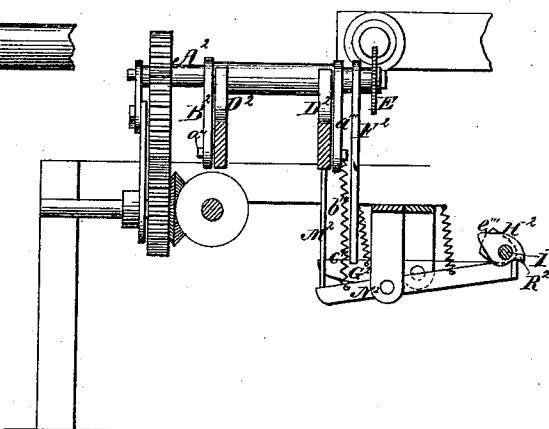


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

THOMAS J. SLOAN, OF NEW YORK, N. Y.

IMPROVEMENT IN MACHINES FOR CUTTING SLOPED NICKS IN WOOD-SCREWS.

Specification forming part of Letters Patent No. **180,280**, dated July 25, 1876; application filed February 28, 1876.

To all whom it may concern:

Be it known that I, THOMAS J. SLOAN, of the city, county, and State of New York, have invented an Improvement in Machinery for Making Wood-Screws, of which the following is a specification:

This invention is especially designed for the manufacture of the wood-screw set forth and described in my Letters Patent No. 172,351, granted to me January 18, 1876, and is supplementary or additional to the invention set forth in my Letters Patent No. 173,355, dated February 8, 1876, the machinery described in this last-named patent being, in certain respects, modified in the application to use of my present invention, hereinafter fully set forth.

My said present invention consists in the combination, with a fixed blank-holder, of a nicking tool or cutter constructed and arranged to cut, first, the one sloped side of the nick in the head of the screw; then the comparatively shallow central portion of said nick; and, finally, the remaining sloped side thereof, the necessity of rotating the blank-holder being, by this means, avoided, and the requisite sloped nick provided in the screw with great accuracy, and with comparative cheapness in the manufacture of the screw.

Figure 1 is a plan view of the machine. Figs. 2 and 3 are detail views representing my said invention.

It is to be understood at the outset that, except in the particulars herein particularly specified, the machine, in its general construction and operation, is identical with that described in my Letters Patent No. 173,355, aforesaid, to which, for description not herein given, reference is made.

It is further to be understood that the blank-holder or blank-holding spindle, instead of having a half-revolution at each cut of the nicking-tool, to enable the nick to be made one-half from each side of the screw-head, is fixed or stationary during the nicking operation, and the devices employed in the machine shown in my said Letters Patent No. 173,355, to give the axial intermittent rotation to the blank-holding spindle during the nicking operation, must, for the purposes of my present invention, be eliminated. Furthermore, the

arrangement and operation of the cutter or nicking-tool are changed, so that, in my present invention, it is constructed for operation as follows:

The cutter E is carried on the end of the shaft A², which rotates in bearings provided in the upper or free ends of swinging standards B², the lower ends of which latter are pivoted to sliding blocks E², capable of a vertical movement in upright guides D². The shaft A² of the cutter (nicking-tool) E is rotated from the gear L¹ by a system of gears, L² K². (Shown in detail in Fig. 2.) From the shaft A² extends a rod, F², which connects at the lower end with one arm of a lever, G², the opposite arm of which rests in contact with a cam, H², on the shaft I². From one of the sliding blocks E² extends rod M², which connects with lever N², the opposite arm of said lever resting in contact with the second cam R². Springs c¹ b¹ serve to hold the rods F² and M² in proper relation with the adjacent ends of the levers just mentioned.

In practice the sliding blocks E² should be connected by a transverse bar, to which, in such case, the rod M² is attached, instead of direct to one of the blocks, as shown in the drawings, by which means greater steadiness and freedom from twisting in its bearings is secured to the shaft A².

In the operation of the machine, the blank being held in the jaws of the holding-spindle, as indicated in Fig. 3, the rotation of the shaft I² and cam R² thereon causes the lever N² to lift the blocks E², and thereby tilt inward the saw to cut the lower half of the nick in the head of the blank held in the jaws, as aforesaid. This done, the further rotation of said shaft causes the cam H² to lift the saw, also tilting the latter back, and into such position that the further rotation of said shaft, by causing the part c¹ of the cam R² to operate on the lever N², and cause it to lift the blocks E, again tilts inward the saw to cut the upper or opposite slope or half of the nick in the head of the blank, the release of the two levers by the two cams permitting the saw to resume its original position preparatory to a repetition of the operation.

It will be especially noted that in this operation of nicking the head of the blank the

saw traverses across the said head of the blank, from one side to the other, with the depth of its cut regulated by the movement given to it by the variable and relative movements of the two actuating-levers.

What I claim as my invention is—

In an organized machine for making slope-nicked screws, the combination, with a blank-holder, fixed as concerns rotation on its own

axis, of a nicking tool or cutter, constructed and arranged to cut the sloped nick of the head of the blank directly across, from one side to the other, without turning the blank, substantially as set forth.

THOS. J. SLOAN.

Witnesses:

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