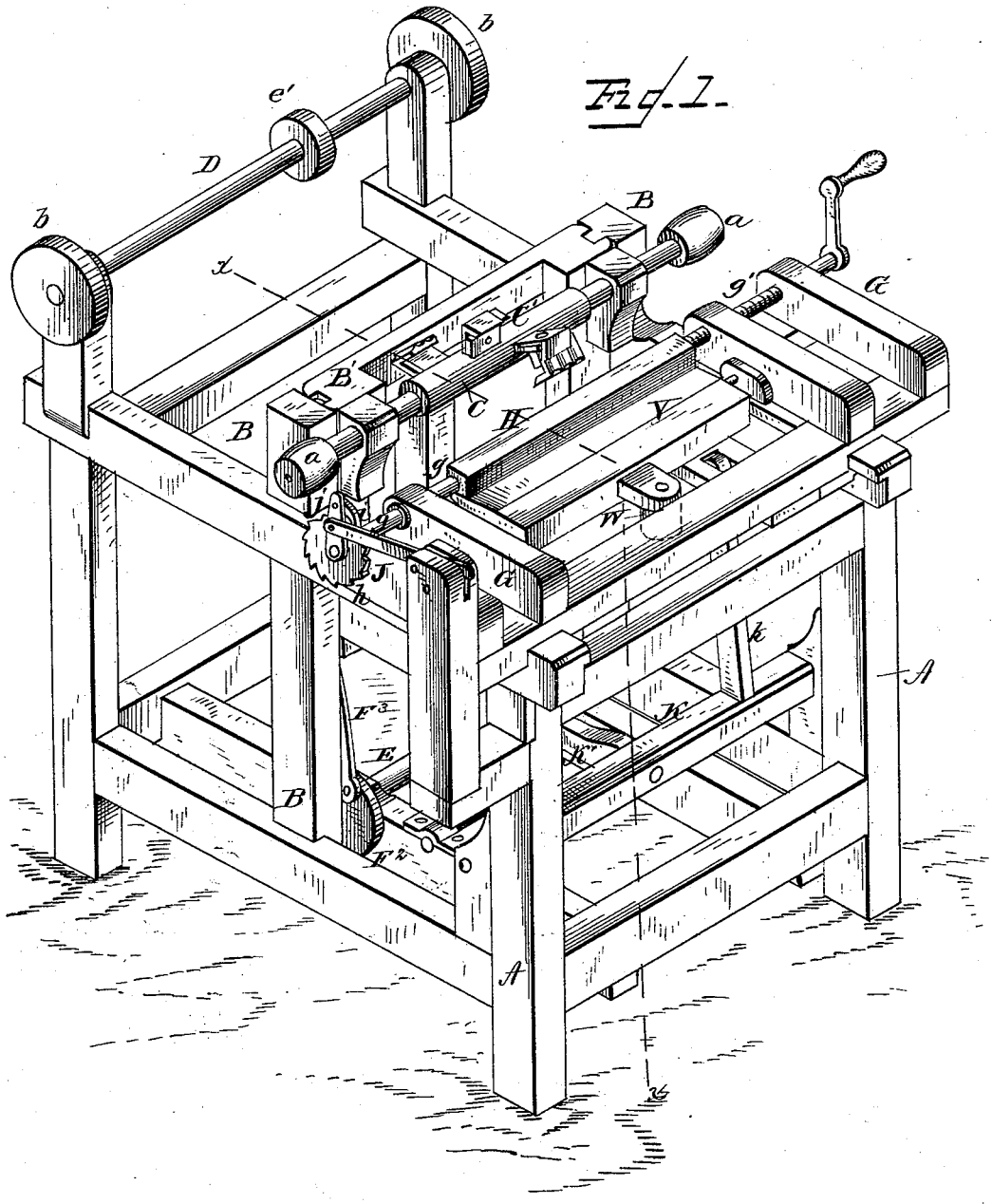
(No Model.) 2 Sheets—Sheet 1.

F. HANSON.

LATHE FOR TURNING POLYGONAL FORMS.

No. 303,639. Patented Aug. 19, 1884.



WITNESSES

F. L. Ourand.

Wm. Garner.

INVENTOR

Freeman Hanson.

by L. Deane

his Attorney

(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

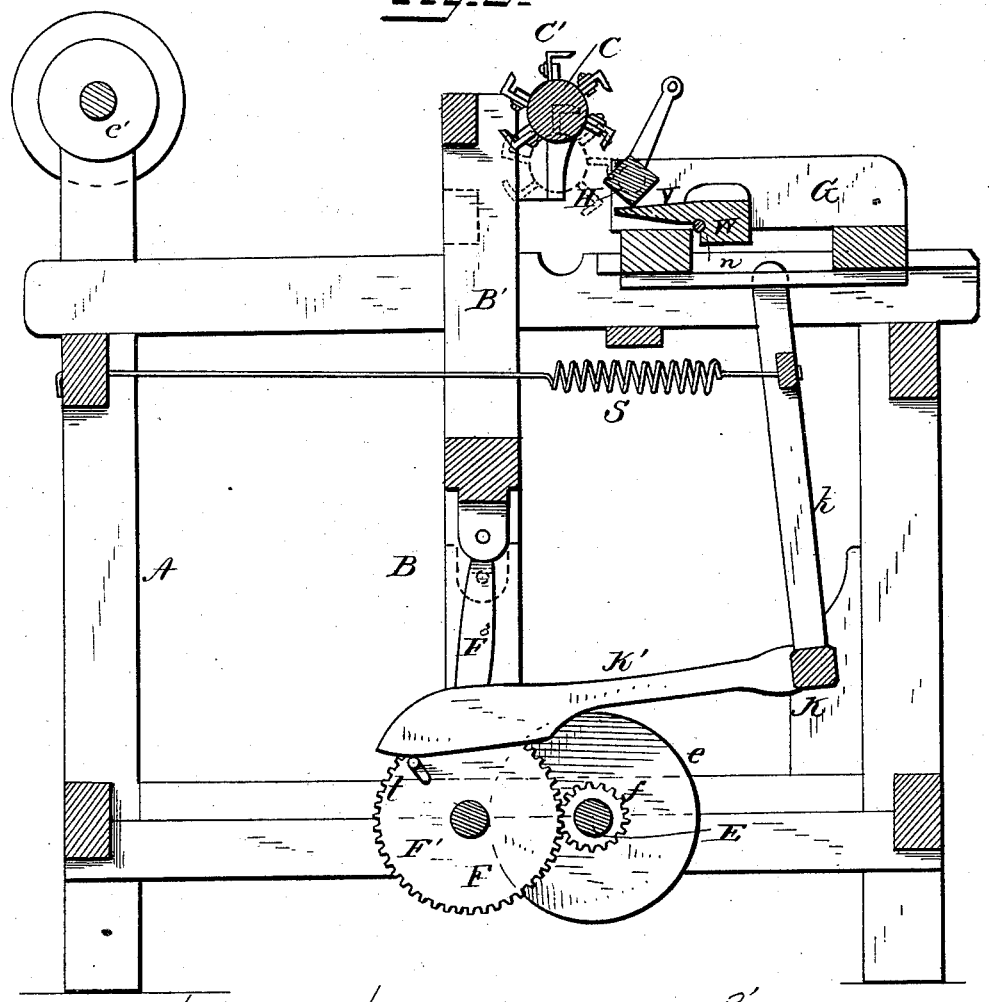


Fig. 4.

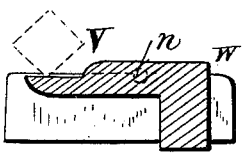
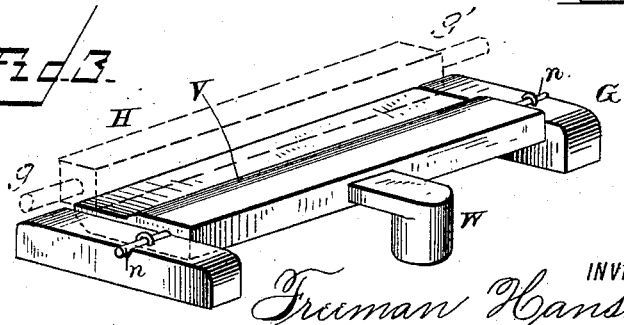


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

FREEMAN HANSON, OF BAR MILLS, ASSIGNOR TO HORATIO W. PALMER, OF HOLLIS, MAINE.

LATHE FOR TURNING POLYGONAL FORMS.

SPECIFICATION forming part of Letters Patent No. 303,639, dated August 19, 1884.

Application filed November 15, 1883. (No model.)

To all whom it may concern:

Be it known that I, FREEMAN HANSON, a citizen of the United States, residing at Bar Mills, in the county of York and State of Maine, have invented certain new and useful Improvements in Turning-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is a perspective view, looking toward the fore part of my improved wood-turning machine. Fig. 2 is a vertical longitudinal section through the machine, indicated by dotted lines *x* on Fig. 1. Fig. 3 is a detail in perspective of the pivoted yielding bearing for the board to be cut, showing the latter in position. Fig. 4 is a cross section of the yielding bearing.

My invention relates to machinery for turning and cutting wood; and it consists, mainly, in a rotating shaft applied to a reciprocating carriage, and having cutters applied to it, in combination with centering and holding stocks for the wood to be cut, which stocks have their bearings in vertically-movable sashes, as will be hereinafter explained; also, in a pivoted yielding support for the wood while being cut or turned, as will be fully understood from the following description, when taken in connection with the annexed drawings.

A designates the main frame of the machine, and B B are vertical guideways for a rectilinear reciprocating carriage, B′, adapted to work between said guideways, and having on its upper end a horizontal transverse cutter-shaft, C, to which a number of suitable cutters, C′, are applied spirally, as shown in Fig. 1. On the ends of the cutter-shafts are keyed pulleys *a a*, around which belts pass that are applied around pulleys *b b*, which are keyed on a shaft, D, that receives rotation from the main driving-shaft E by means of a belt which is passed around pulleys *e e′*. I thus transmit rotation to the cutter-shaft from the main driving-shaft. On the main shaft is keyed a pinion spur-wheel, *f*, which engages with the teeth of a large spur-wheel, F, keyed on a shaft, F′. On the end of this shaft F′ are keyed crank-wheels F^2, which transmit reciprocating motion to the carriage B′ by means of pitman-rods F^3.

G designates a horizontally-movable carriage, which is composed of longitudinal and transverse bearing-bars, and which is kept in place by suitable guides applied to the top rails of the main frame A. Two of the bars of the carriage G afford bearings for a rotating chuck, *g*, and the other two of the bearing-bars are screw-tapped to receive a centering-screw, *g′*, bearing on its end a crank-handle. The wooden bolt or bar H to be cut or turned is confined between said chucks and centering-screw, as shown in Fig. 1. On the outer end of the chuck-spindle is keyed a ratchet-wheel, *h*, having any desired number of teeth, with which a pawl, *i*, engages, that is pivoted to a vibrating arm, *j*, playing loosely on the end of the chuck-spindle. The pawl-arm J is connected to a fixed piece of the main frame A by a pivoted rod, J′. Now, it is obvious that at every forward stroke of the carriage-sash G the bolt or bar H which is being acted on by the cutters will receive part of a revolution. Thus during the operation of the machine new surfaces to be cut will be constantly presented to the rotating cutters C′.

K designates a rock-shaft which has its bearings in the frame A, and from which project arms *k*, the upper ends of which are loosely connected to the carriage G. From the middle of the length of the rock-shaft K extends a lever, K′, which is struck by a tappet-pin, *t*, fixed to the face of the large spur-wheel F, at every revolution of this wheel, and causes the carriage G to recede from the cutters C′. The carriage G is moved forward, to present the wood to be turned to the cutters, by means of a spring, S. (Shown in Fig. 2.) Instead of the spring S, weights may be substituted. In practice I shall make the tappet-pin *t* radially adjustable, by which means the throw of the levers K′, and consequently the carriage G, can be regulated, and the amount of rotation of the bolt or bar H controlled.

V designates a horizontal transverse pressure-bar, which is pivoted at *n n* to the carriage G, and provided with a weight, W. The forward lip of the bar V is arranged beneath the stuff to be turned, and is held against it by the action of the weight W. Instead of the weight W, a spring may be employed, the tension of which may be adjustable. Now, the object of the pressure-bar V is to afford a yielding bearing or support for the stuff being turned, and

thus in a great measure relieving the end supports, *g g'*, from undue strain. This bar V serves to hold the wood or bolt steady and prevent it from breaking or splintering while being cut or turned.

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

1. In a machine for turning or cutting wood, the combination, with the main frame of a vertically-rectilinear reciprocating carriage bearing on its forward end a rotating shaft having a series of cutters applied to it, and a horizontally-reciprocating carriage bearing a rotating chuck and a centering device, of the bolt or bar to be cut, substantially as described.

2. The combination of a reciprocating cutter-carrying carriage having rotating cutters applied to it with a horizontally-movable carriage adapted to hold work to be cut, and a ratchet and pawl for automatically rotating the work, substantially as described.

3. The combination of a carriage carrying rotary cutters, pitman-rod connection of this carriage with crank-wheels on a shaft, F', the spur-wheel F on said shaft, the adjustable tappet on said shaft, the lever K, its rocking frame acted on by a spring or its equivalent, and the horizontally-movable carriage adapted for carrying the wood to be cut and feeding the same up to the cutters, all constructed and adapted to operate substantially in the manner and for the purposes described.

4. In a machine for turning or cutting wood, a rectilinear reciprocating carriage having on one end a rotating cutter-shaft, pulleys on the end of this shaft, pulleys on the ends of shaft D, their connecting-belts, pulleys *e* on shaft D, pulleys *e'* on the main driving-shaft, the belt-connection therefor, pinion-wheel *f* on the main shaft, a large spur-wheel, F, on shaft F', crank-wheels on shaft F', and pitman-rod connections with said carriage, substantially as described.

5. The combination, with the cheeks of the carriage G and the centering-screw, and the rotating chuck adapted to hold a bolt to be turned, of the broad pressure-blade V, pivoted to two of the cheeks of said carriage, and provided with a weight, W, substantially as described.

6. The combination, with an elongated gravitating pressure-plate which is pivoted to the side walls, of a carriage bearing a chuck for a bolt or block, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FREEMAN HANSON.

Witnesses:

JOHN I. PERRY,

A. M. AUSTIN.