

(No Model.)

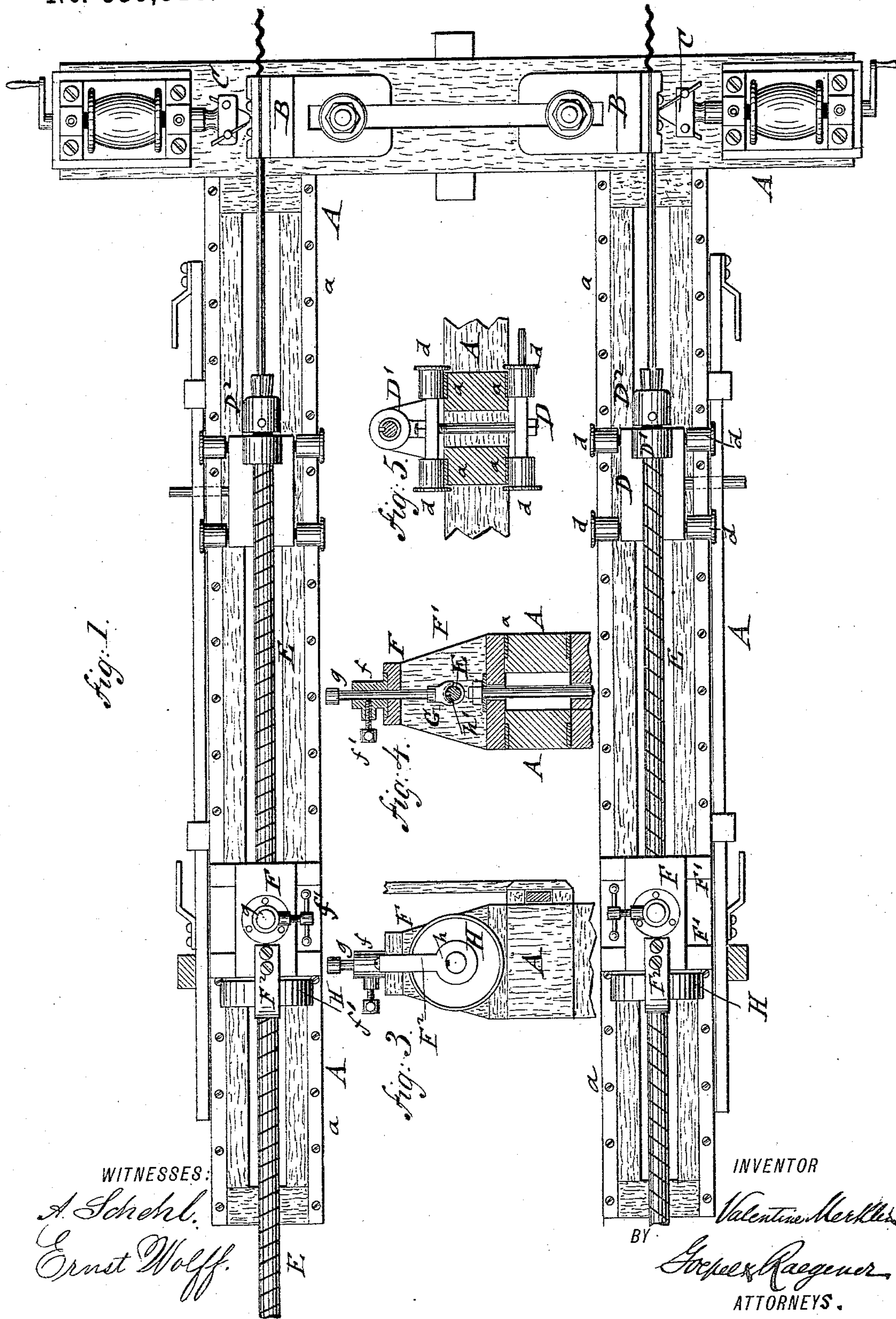
2 Sheets—Sheet 1.

V. MERKLEN.

MACHINE FOR TURNING WOODEN SPIRALS.

No. 339,314.

Patented Apr. 6, 1886.



WITNESSES:

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BY

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(No Model.)

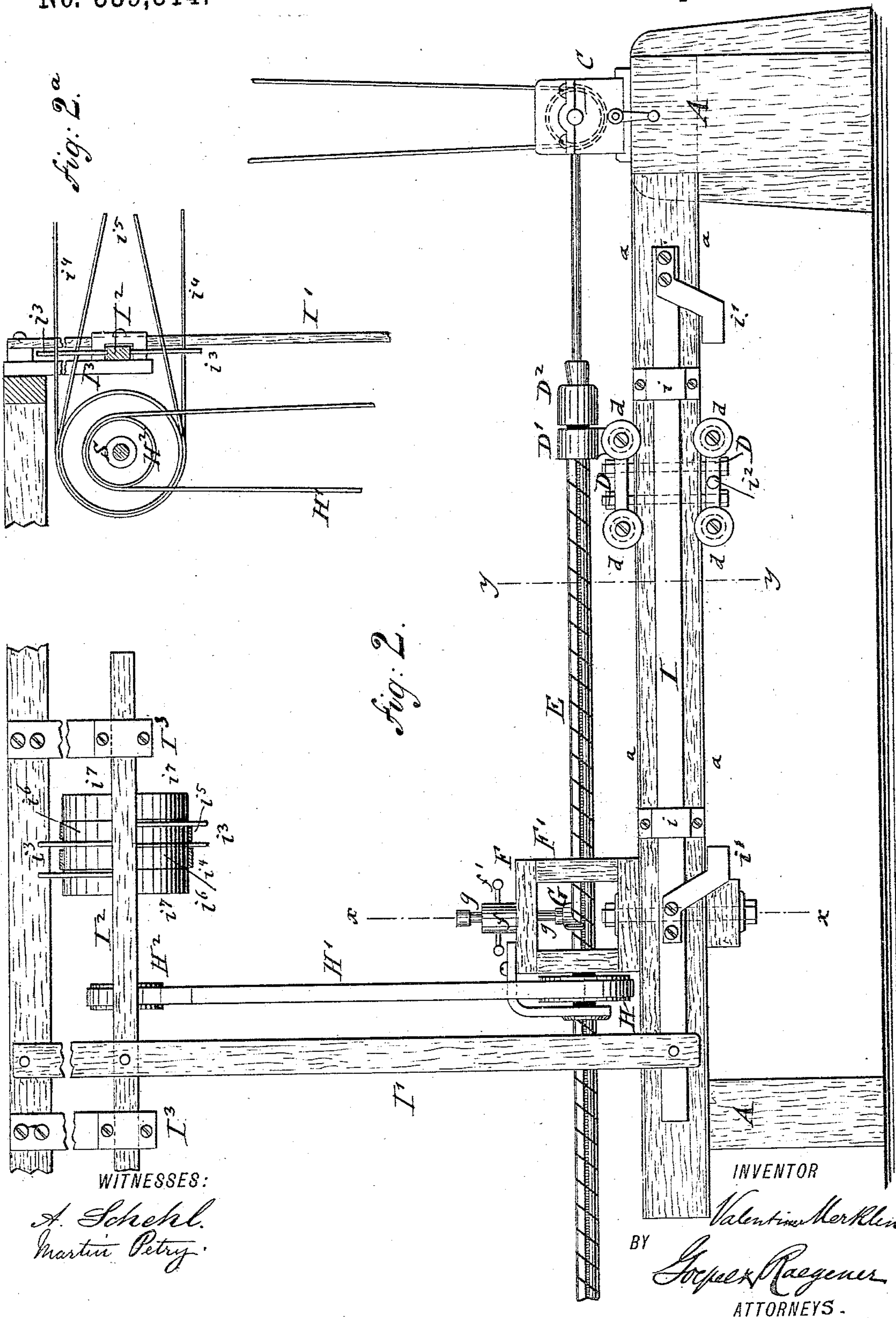
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# UNITED STATES PATENT OFFICE.

VALENTINE MERKLEN, OF NEW YORK, N. Y.

## MACHINE FOR TURNING WOODEN SPIRALS.

SPECIFICATION forming part of Letters Patent No. 339,314, dated April 6, 1886.

Application filed October 7, 1885. Serial No. 179,187. (No model.)

*To all whom it may concern:*

Be it known that I, VALENTINE MERKLEN, of the city, county, and State of New York, have invented certain new and useful Improvements in Machines for Turning Wooden Spirals, of which the following is a specification.

This invention relates to an improved machine for turning wooden spirals for use in chair-backs, panels, and similar purposes, the machine being intended to turn them out quickly and uniformly; and the invention consists of the combination of a rotary cutter, a guide-rest for the blank at right angles to said cutter, a longitudinal guideway, a traversing carriage, and a rotary feed-rod supported by the carriage and provided with a chuck in front of the same, and with a spiral groove that is engaged by a fixed fork, so as to feed the blank that is clutched to the end of the feed-rod to the guide-rest and rotary cutter, so as to expose it to the action of the latter and cut it into spirally-twisted shape.

In the accompanying drawings, Figure 1 represents a plan of my improved machine for turning wooden spirals, two machines being arranged sidewise of each other, so as to be attended to by one workman. Fig. 2 is a side elevation; Fig. 2<sup>a</sup>, a side view of the motion-transmitting pulleys. Fig. 3 is an end view; and Figs. 4 and 5 are vertical transverse sections, respectively, on lines *x x* and *y y*, Fig. 2.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the supporting-frame of my improved machine for turning wooden spirals, which frame is made T-shaped, the shorter transverse portion of which supports a guide-rest, B, for the cylindrical blank, and a rotary cutter, C, whose axis is arranged at right angles to the guide-rest, and whose cutting tool or tools project from the end. The longer longitudinal portion of the frame A serves as a guideway for the mechanism by which the blank is fed to the cutter. The longitudinal portion of the frame A is provided at the upper and lower corners with iron rails *a*, that serve as ways for a traversing-carriage, D, having flanged wheels *d d*, said carriage having an upright

standard, D', that is provided with bearings for the rotating feed-rod E. The feed-rod E is provided in front of the standard D' with a chuck, D<sup>2</sup>, by which the end of the blank is tightly clamped. The rear part of the feed-rod E is guided in upright standards F' of a yoke, F, which supports at its top part a guide-sleeve, *f*, having a clamp-screw, *f'*, for adjusting the shank *g* of a fork, G, that engages a spiral groove of the feed-rod E. A pulley, H, is placed on the feed-rod E, between the yoke F and a bent retaining-arm, F<sup>2</sup>, of the same, and connected by a spline, *h*, with a longitudinal groove, *h'*, of the feed-rod E. The feed-rod E is rotated by the pulley H, a belt, H', and a pulley, H<sup>2</sup>, on the driving-shaft S, which latter is supported in hangers, as shown in Figs. 2 and 2<sup>a</sup>. The rotary motion of the feed-rod E is changed by the spline-connection of the pulley and by the action of the fork G on the spiral groove of the feed-rod into a rotary and slowly advancing forward or traversing motion. Alongside of the frame A is guided in suitable keepers, *i*, a longitudinal belt-shifting rod, I, which is provided at both ends with downwardly-extending lugs *i' i'*, that are engaged by a laterally-projecting pin, *i''*, at the lower part of the carriage when the same arrives at either end of its movement.

To the rear end of the rod I is pivoted the lower end of a vertical rod, I', which is pivoted at its upper end to a support overhead, and to a horizontal rod, I<sup>2</sup>, that is guided in fixed hangers I<sup>3</sup>. The rod I<sup>2</sup> is provided with two belt-shifting forks, *i<sup>3</sup> i<sup>3</sup>*, that engage a straight belt, *i<sup>4</sup>*, and a cross-belt, *i<sup>5</sup>*, and move the same alternately on a wider loose pulley, *i<sup>6</sup>*, and two fast pulleys, *i<sup>7</sup>*, on the power-transmitting shaft S, so as to produce the ready starting, stopping, and reversing of the machine. The guide-rest B is adjusted into line with the axis of the feed-rod E, while the cutter C receives rotary motion by a separate belt-and-pulley transmission in the usual manner. The cutter-support is also adjustable, so that the cutter can be screwed back for admitting the return movement of the spiral blank when it is desired to give more than one ornamental spiral twist to the same. The rapidly rotating cutter C serves to cut the cylindrical blank into spiral shape while the same is fed



through the guide-rest by the feed-tube. It is preferable to arrange two machines sidewise of each other, as shown in Fig. 1, so that blanks can be inserted alternately by the attendant and the spiral-molding finished in a quick and economical manner. When the spirals are finished, they are removed from the clutch and cut to the size required for the different purposes for which they may be used.

The operation of the machine is as follows: By the belt-shifting rod both belts  $i^4$   $i^5$  are moved on the loose pulley, so that the feed-rod E is at rest. The rear end of the wooden blank is then placed into position in the chuck of the feed-rod E and inserted at its front end into the guide-rest B. The straight belt  $i^4$  is then shifted onto the driving-pulley, and the feed-rod thereby moved forward and the blank exposed to the cutting action of the rotary cutter. The carriage engages by its pin  $i^2$  the lug  $i^1$  of the shifting-rod I and moves the belt  $i^4$  on the loose pulleys  $i^6$ , so as to stop the machine. The attendant removes the finished spiral and shifts the rod back, so as to bring the cross-belt  $i^5$  on the fast pulley  $i^7$  of the shaft S, whereby the motion of the feed-rod is reversed until the carriage shifts the rod I back again and throws the cross-belt on the loose pulley  $i^6$ , so as to automatically stop the machine. The attendant shifts again the rod I and brings the straight belt on the fast pulley of the shaft S, whereby a rotary forward advancing motion is imparted to the feed-rod. Before the shifting-rod I is moved forward, a new blank is inserted into the clutch of the feed-rod. When the blank is turned into a spiral molding, the machine is automatically stopped, the molding removed, the feed-rod returned supplied with a new blank, and so on alternately on each machine.

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

1. In a machine for turning wooden spirals, the combination of a guide-rest, a rotary cutter the axis of which is located at an angle to and in the same plane with the axis of the guide-rest, and the cutting tool or tools of which operate upon the stock opposite said guide-rest, a rotary feed-rod, and mechanism, substantially as described, for imparting traversing motion to the feed-rod.

2. In a machine for turning wooden spirals, the combination of a laterally-adjustable guide-rest, a laterally-adjustable rotary cutter the axis of which is arranged at an angle to and in one plane with the axis of the guide-rest, the cutting tool or tools of which operate upon the stock opposite said guide-rest, and a rotary and longitudinally-traversing feed-rod having a chuck for the blank.

3. In a machine for turning wooden spirals, the combination of a guide-rest, a rotary cutter the axis of which is located at an angle to and in the same plane with the axis of the guide-rest, the cutting-edges of said cutter being endwise of said axis and operating upon the stock opposite said guide-rest, a rotary feed-rod, and mechanism, substantially as described, for imparting traversing motion to the feed-rod.

4. In a machine for turning wooden spirals, the combination of a laterally-adjustable guide-rest, a laterally-adjustable rotary cutter the axis of which is arranged at an angle to and in one plane with the axis of the guide-rest, the cutting-edges of said cutter being endwise of its axis and operating upon the stock opposite said guide-rest, and a rotary and longitudinally-traversing feed-rod having a chuck for the blank.

5. The combination of a guide-rest, a rotary cutter arranged at right angles to said guide-rest, a rotary feed-rod having a chuck for the blank, mechanism, substantially as described, for imparting a traversing motion to the feed-rod, and a carriage for supporting the front end of the feed-rod, substantially as set forth.

6. The combination of a guide-rest, a rotary cutter arranged at right angles thereto, a feed-rod, a carriage supporting the front end of the feed-rod, mechanism, substantially as described, for imparting simultaneously a rotating and a traversing motion to the feed-rod, and a lug against which said carriage strikes, whereby the motion of the feed-rod is automatically stopped when the spiral is finished.

7. The combination of a supporting-frame having guideways, a guide-rest, a rotary cutter at right angles to the guide-rest, a rotary feed-rod having a longitudinal and a spiral groove, a carriage supporting the front end of the feed-rod, a motion-transmitting pulley splined to the feed-rod, and a fork engaging the spiral groove of the feed-rod, whereby a rotary and traversing motion is imparted to the same, substantially as set forth.

8. The combination of a supporting-frame, a guide-rest, a rotary cutter arranged at right angles to the guide-rest, a rotary and longitudinally-traversing feed-rod, a carriage supporting the front end of the feed-rod, a belt-shifting rod having lugs operated by said carriage for automatically stopping the feed-rod, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

VALENTINE MERKLEN.

Witnesses:

PAUL GOEPEL,  
SIDNEY MANN.