R. H. WATSON, A. L. KINGSBURY, W. D. & A. S. KING.

Machines for Making Wooden Pins.

No. 133,907. Patented Dec. 10, 1872.

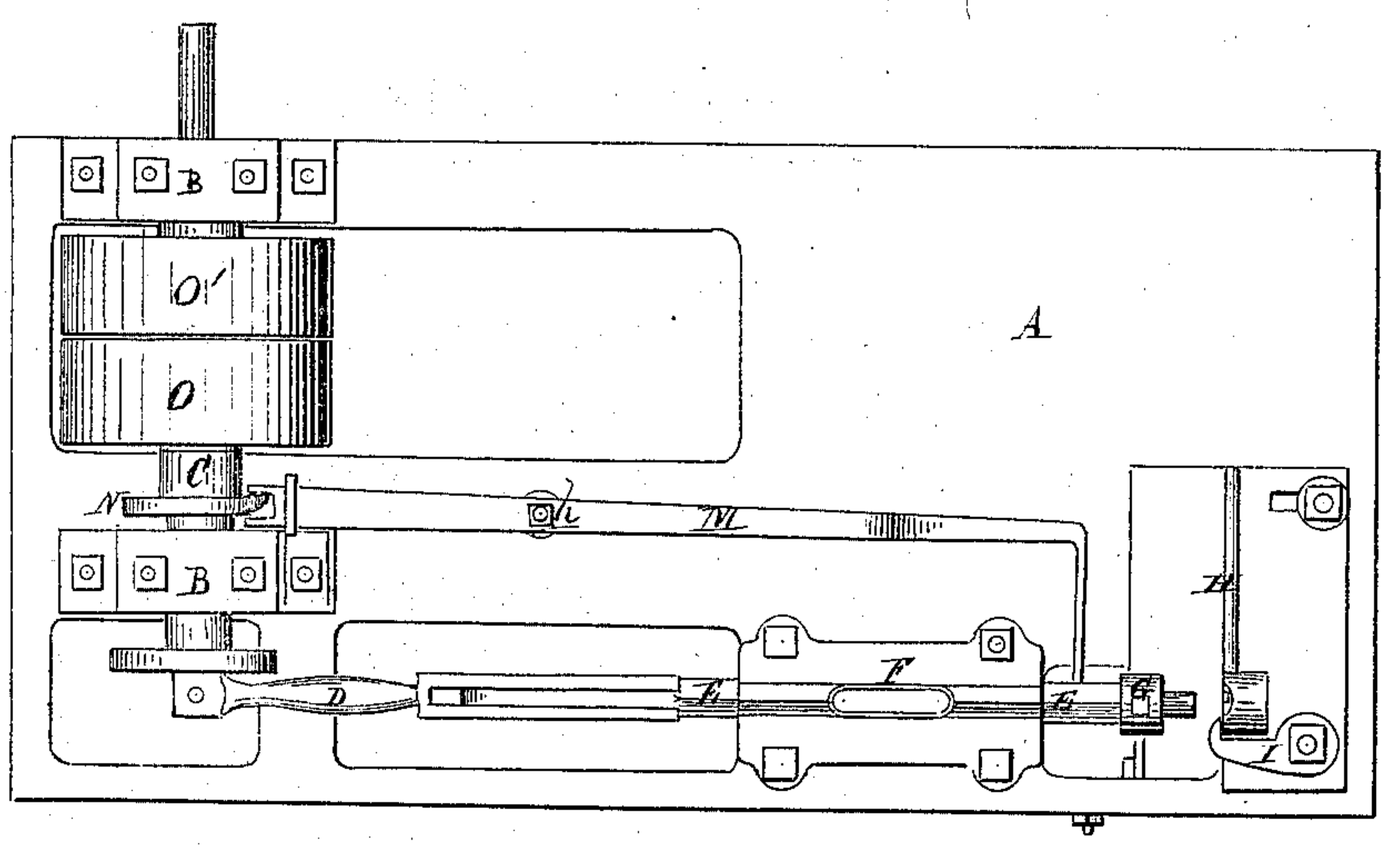

Fig. 1.

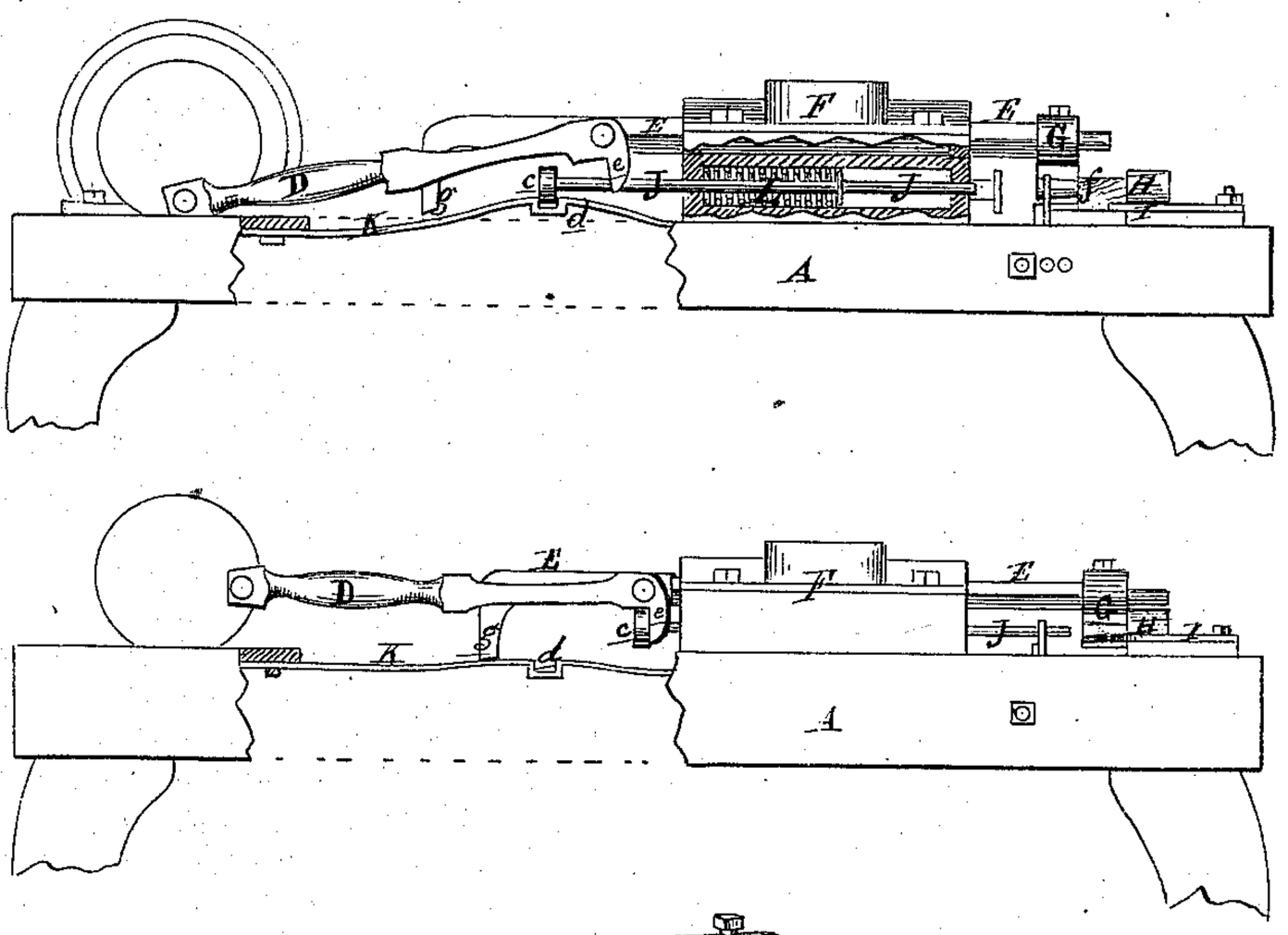

Fig. 2

Fig. 3.

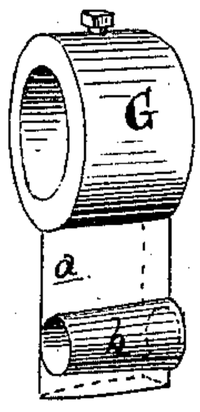

Fig. 4

ATTEST:
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by their Attorney
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UNITED STATES PATENT OFFICE.

ROYAL H. WATSON AND ANDREW L. KINGSBURY, OF LAPEER, AND WALTER D. KING AND A. SYDNEY KING, OF PONTIAC, MICHIGAN, ASSIGNORS TO ROYAL H. WATSON AND ANDREW L. KINGSBURY.

IMPROVEMENT IN MACHINES FOR MAKING WOODEN PINS.

Specification forming part of Letters Patent No. **133,907**, dated December 10, 1872.

To all whom it may concern:

Be it known that we, R. H. WATSON and A. L. KINGSBURY, of Lapeer, in the county of Lapeer, and W. D. KING and A. S. KING, of Pontiac, in the county of Oakland, and State of Michigan, have invented a new and useful Improvement in Machines for Making Wooden Pins, &c.; and we do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon and being a part of this specification, in which—

Figure 1 is a plan of our machine; Fig. 2 is a sectional side elevation of the same with the pointing-die held back and the cutting-die in the act of cutting; Fig. 3 is a similar figure with the parts in the position they are at the completion of the process of cutting and pointing a pin; and Fig. 4 is a perspective view of the cutting-die.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to a machine for making and pointing wooden pins, such as are used by joiners—dowel-pins, rake-teeth, &c.—and is more particularly designed as an improvement on the machine for which Letters Patent of the United States were issued to Royal H. Watson, bearing date November 1, 1870, and No. 108,859. The invention consists, first, in the arrangement of said die on a bar reciprocated by mechanism more fully hereinafter specified; second, in the novel and peculiar arrangement of the parts for operating the pointing-die; and, third, in the employment of a cam-wheel on the driving-shaft for removing the pins from the die as they are made, by means of a bent lever.

In the drawing, A represents a table, preferably of metal, and supported by suitable legs or standards. B are pillar-blocks, transversely disposed at one end of the table; and C is the driving-shaft journaled therein, having at the inner end a face-plate, to whose wrist the pitman D is secured by a suitable strap; or the stub end of said strap may be bored to receive the wrist-pin, as shown. The pitman is forked and pivoted to a die-rod, E, which reciprocates through a long guide-box F. At the projecting end of the die-rod a die, G, Fig. 4, is secured by a set-screw. This die is in the form of a pendent knife, *a*, for splitting a bolt from the timber fed up to it, and having a hollow die, *b*, attached thereto, which gives the pin its form, the bore being less than the length, and of form of the finished pin. H is a transverse guide on the table, against which the timber rests, and I is a stop against which it is fed up. J is a die-pin, working through bearings in the lower part of the guide-box, cupped on the outer end to point the wooden pins as they are formed, and provided with a head, *c*, on the other to engage with the recess or socket *d* in a spring, K, when drawn back as far as the said socket. This spring is a curved leaf of steel, longitudinally secured in the frame under the pitman, at one end, the other being free to vibrate. L is a spring spirally coiled about the die-pin J, within the recess in the guide-box, between its inner head and a pin through the die-pin. The pitman has its inner ends formed in two downward-pointing hooks, *e*, which, at the completion of the pin, as in Fig. 3, engage with the head of the die-pin, and draw the latter back until the recess in the spring is reached, when the latter engages with the head and retains the die-pin, while the pitman returns with the die to cut and form another pin, the timber being shown at *f*, Fig. 2. As the pitman completes its forward movement, and the wooden pin is nearly or quite formed, a stud, *g*, on the rear end of the die-rod E depresses the spring K and releases the die-pin, whose spring causes it to strike a smart blow on the end of the wooden pin still in the forming-die, rounding that end so that it may enter the hole in which it is afterward to be driven. As the die is withdrawn the block of wood is again fed up by the attendant, and in taking the next cut the pin previously make is forced out, or nearly out, of the back end of the die. To insure its detachment from the die in this position the forward and curved end of a lever, M, pivoted at *h* to the table, is caused to strike the finished pin,

by a cam-wheel, N, on the driving-shaft, working in jaws at the rear end of said lever, detaching said pin, which drops through an opening in the table into a receptacle beneath.

Although the machine can easily be operated by hand, through a crank at the end of the driving-shaft, it is fitted with fast and loose pulleys O O′ to be driven by a belt from a line-shaft.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination of the shaft C, pitman D, die-rod E, guide-box F, die G, guide H, and stop I on the table A, substantially as described, for the purpose specified.

2. The combination of the spiral spring L, the curved and recessed spring K, the hooks *e* of the pitman, and stud *g* of the die-rod, substantially as shown and set forth.

3. The combination of the bent lever M, cam-wheel N, and driving-shaft C with the die G, the lever being adapted to detach the finished pins from the die, as described.

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