

E. C. JOHNSON.

Machines for Making Wooden Pins.

No. 138,658.

Patented May 6, 1873.

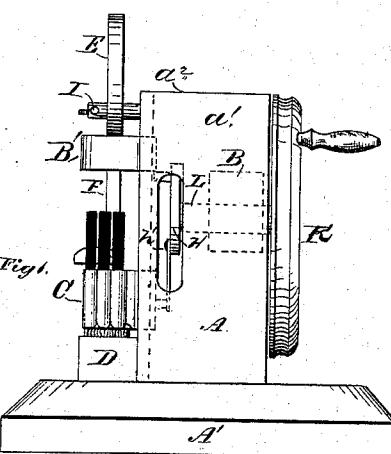


Fig. 2

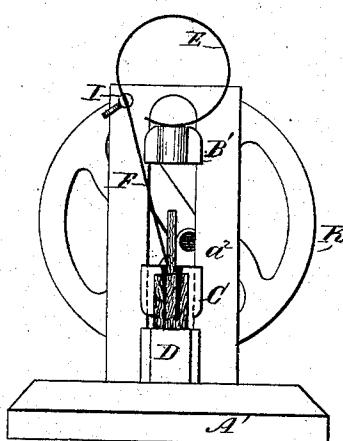


Fig. 3

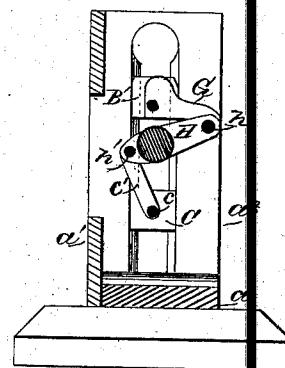
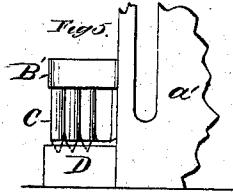
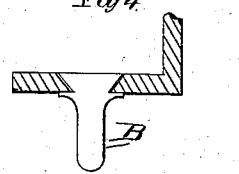


Fig. 4



Witnesses:

John Clark.

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Attest:

UNITED STATES PATENT OFFICE.

EDWARD C. JOHNSON, OF WILLIAMSPORT, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR MAKING WOODEN PINS.

Specification forming part of Letters Patent No. 138,658, dated May 6, 1873; application filed December 12, 1872.

To all whom it may concern:

Be it known that I, EDWARD C. JOHNSON, of Williamsport, in the county of Lycoming and State of Pennsylvania, have invented a new and useful Machine for Making Wooden Pins; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

This invention consists, first, in the employment of a die-block having recesses for pointing the pins, in connection with a punch adapted to cut the pins from the block, the die and punch being so arranged relatively to each other that the pins are pointed at the end which passes last through the punch; second, in the employment, in connection with the punch and die, arranged as above described, of independent means for driving the points of the pins into the recesses of the die; third, in the employment of a spring in connection with the means used for driving the points of the pins into the recesses of the die; fourth, in the employment of a spring of peculiar construction and arrangement for throwing the pins to one side as they leave the punch; and, fifth, in certain details of construction, which, in connection with the foregoing, will be fully described hereinafter.

In the drawing, Figure 1 represents a side elevation of my improved machine; Fig. 2, a front elevation, with the punch in section; Fig. 3, a sectional elevation; Fig. 4, a top view of the drop-block; and Fig. 5, a partial side elevation.

To enable others skilled in the art to make and use my invention, I will now proceed to fully describe its construction.

A represents a suitable frame, preferably made of metal, of the form shown, which is supported upon any suitable base or standard, A'. It is provided, as will be observed, with a portion, a, Fig. 3, constituting a base-plate, and with slotted sides a^1 a^2 , which support the remaining parts of the machine. B, Fig. 1, represents, in dotted lines, a bearing-box, attached by means of screws or bolts to the side a^1 , in which rests the shaft L, as shown, which has at one end the band-wheel K, and at the other the double crank H, which latter is pro-

vided with pins h h' , one at each end, as shown in Fig. 3. D represents a die, which is suitably supported in line below the punch C, and held in place in any proper manner; but is preferably united to the side a^2 by means of grooves or recesses at one end, in which rest the corresponding edges of the slot of side a^2 . The punch C consists of a connected series of frustums of cones, each having a central opening of equal, or nearly equal, diameter. It is held within the slot of the side piece a^2 by means similar to those described for holding the die-block, but without interfering with its free vertical movement. It is, moreover, provided upon its inner side with a pin, e, which is connected to the pin h' by means of a rod or link, c', as shown. B' represents a drop-block, consisting of a piece of metal of proper form, which is secured to the slot of the piece a^2 in such a manner as to have a free vertical movement therein, and has attached to its inner side A a lifter-bar, G, as shown. E represents a flat metallic spring, which is secured at one end in the slot of the pin I, and is so bent that its other end rests, when in its natural position, over the block B', as shown. F also represents a flat metallic spring, which is also secured at its upper end in the slot of pin I, and has its lower end provided with a foot, attached at right angles thereto, as shown. The pin I is provided with a set-screw, by means of which its ends are drawn tightly together to hold the springs from accidental displacement.

The operation of my machine is as follows; Power being applied to the band-wheel in any suitable manner and from any proper source, the consequent movement of the shaft L operates the double crank H, and through it, by means of the pin h' , connecting-rod e, and pin c', the punch C. By means of the pin h of the crank motion is also communicated to the drop-weight at the proper time. When the punch is raised in its upward movement a sufficient distance, a block of wood of suitable dimensions is inserted between it and the die-block, with the grain in a vertical position, from which, as the punch descends, the pins are cut. At the same time that the punch is descending and cutting the pins from the block, the drop-weight is being carried up-

ward by the pin h of the crank H , which pin bears against the lifter-bar G , as shown. When the punch C has completed its downward movement the drop-weight B also completes its upward movement, and the crank-pin h , revolving out of contact with the lifter-bar G , is released, and being free to fall descends and strikes upon the projecting ends of the pins just formed by the punch and still remaining in it, by which means the lower ends of the pins are forced into the concave recesses of the die, and are thus pointed. The continued revolution of the crank elevates the punch, in which still remain the pins just made; but when the punch again descends, a block of wood having been again placed beneath it, the pins are forced out by the entrance of the new wood, and are swept by the spring F into a proper receptacle, suitably located near the machine. The drop-weight again descends at the proper time, and the new pins are pointed as before, these various operations being successively continued as long as the machine is kept in motion and wood is supplied.

The spring E operates to give the weight B a quick initial movement, so that its operation may be the same, whether the speed of the machine varies or not. The spring F is so bent that when in its natural position its lower end extends over the line of travel of the punch and drop-weight. It is free however to move only when the punch has nearly completed its downward movement, at which time it throws the pins to one side. At other times it is held from moving by contact with the side of the drop-block or punch.

Some of the marked advantages of the described construction are as follows: The pins are pointed at the end which passes through the punch last, this end being at times smaller than the opposite end, and more or less im-

perfect, by which means a much larger percentage of pins are capable of use than is possible if the opposite end is pointed. The pins are formed rapidly by means of the drop-weight, which is adapted to operate on pins of different lengths. The drop-weight, by means of the spring, has a quick initial movement, so that its action does not vary with the speed of the machine, but is the same under all circumstances. The machine as a whole is simple in its construction, and yet performs rapidly and effectively the work for which it is designed.

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

1. The combination of the punch and recessed die, relatively arranged, as described, with the drop-weight, substantially as described.
2. In a machine of substantially the described construction, the combination of the stationary die-block having recesses, as described, the reciprocating punch, the drop-weight, and the spring for throwing the pins, substantially as described.
3. The combination of the springs E and F with the slotted pin I and its set-screw, as described.
4. The combination of the frame A , bearing box B , shaft L , double crank H with pins h h' , punch C with its connecting-rod, die D , drop-weight B , and springs E and F , all arranged and operating as described.

This specification signed and witnessed this 7th day of December, 1872.

EDWARD C. JOHNSON.

Witnesses:

J. ENTERMARKS,
A. D. HERMANCE.