

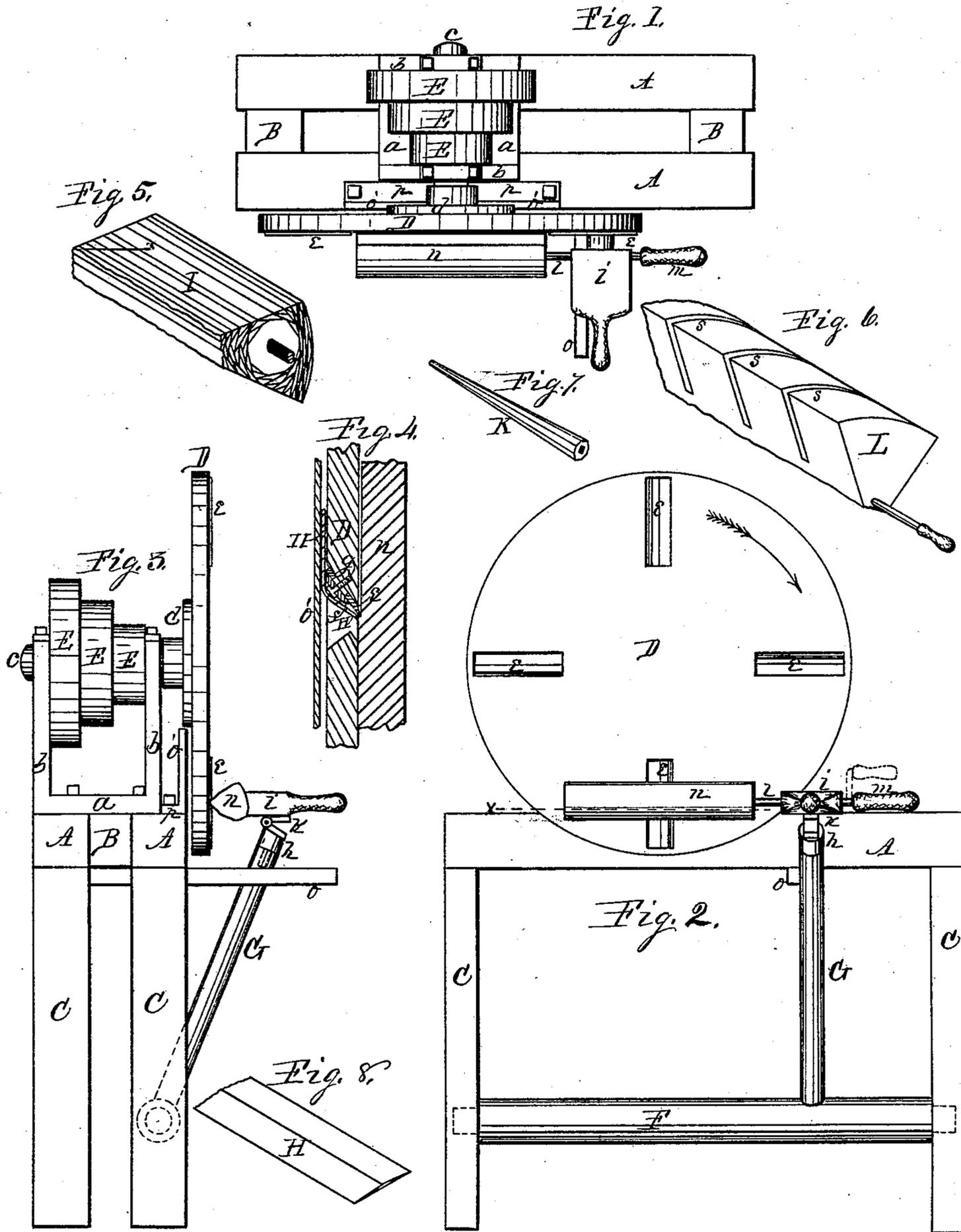
(No Model.)

J. W. PETTENGILL.

Machine for Cutting Wood Feathers.

No. 236,621.

Patented Jan. 11, 1881.



Witnesses:
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JOB W. PETTENGILL, OF ROCKFORD, ILLINOIS.

MACHINE FOR CUTTING WOOD FEATHERS.

SPECIFICATION forming part of Letters Patent No. 236,621, dated January 11, 1881.

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To all whom it may concern:

Be it known that I, JOB W. PETTENGILL, of the city of Rockford, in the county of Winnebago and State of Illinois, have invented a new and useful Improvement in Machines for Cutting Wood Feathers, of which the following is a specification.

This invention has for its object the production of a suitable wood filling for beds and pillows, and capable of use for the various purposes in upholstery, carpet-linings, and other like purposes, and useful as a packing material; and it consists in a machine embracing certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of one form of a machine on which to produce my improved wood feathers. Of this machine, Fig. 2 is a front elevation, and Fig. 3 an end elevation. Fig. 4 is a horizontal section of the cutter. Fig. 5 is an isometrical representation of a billet or bolt of wood, of sector form, split from a section of a log cut to proper length from which to produce feathers. Fig. 6 is also an isometrical representation of a billet split from a section cut from a log. Fig. 7 is an isometrical representation of a core of a billet from which feathers have been cut. Fig. 8 is an isometrical representation of a feather cut from a billet.

In the figures, A represents lengthwise beams, into which are framed transverse beams E, producing a frame rectangular in plan, which is supported on standard C, framed into their end portions, producing a supporting-frame. On this frame is mounted a suitable bracket-frame, consisting of a bed-plate, *a*, and standards *b*, on which is mounted a transverse shaft or mandrel, *c*, supported to revolve thereon in suitable bearings. This mandrel is fitted with a face-plate, *d*, substantially the same as face-plates in use on turning-lathes, and is mounted thereon by screw-threaded connection with the mandrel in the same manner. On this face-plate is mounted, and securely fitted thereto, a face-wheel, D, in the outward portion of which are placed cutters *e*, on radial lines, which cutters extend outward nearly to the periphery of the wheel. These cutters are of plane-bit form, and are placed obliquely to the axis and face of the wheel, substantially in the same manner

as plane-bits are placed in their stocks, and are provided with caps *f*, and are held in position and made adjustable by means of a clamping screw-bolt, *g*, which is passed through the cap and bit into the wheel, the cap serving to enlarge the bearing of the bolt to give greater firmness to the bit.

E represents a cone of pulleys mounted on the mandrel between its supports, to engage a like cone of pulleys to connect the wheel with the prime mover, to impart motion to the wheel carrying the cutters.

At F is represented a roller having its ends journaled in the lower portion of the front standards. In this roller F is fitted a standard, G, capable of an outward-swinging movement. The upper end of this standard G is provided with an axial hole, fitted to receive a pivot-stud of the cap portion *h*, as represented in dotted lines, to permit the cap to oscillate on the standard. At *i* is represented a hand-lever, which is connected to the pivoted cap *h* by a hinge-joint, *k*, to permit of a rocking movement of the hand-lever on the support. This connection of the hand-lever with the standard permits of a vertical and horizontal movement of the lever thereon, and, in connection with the standard, is capable of a back-and-forth movement to and from the wheel. The inner end of this hand-lever is provided with a transverse hole adapted to receive a spindle, *l*, freely. This spindle *l* consists of a round metallic bar fitted with a handle, *m*, and having its free end pointed in a suitable manner to be driven into the end of the blocks or billets of wood from which to cut the feathers.

At *n* is represented a billet of wood, into which the spindle *l* in the hand-lever *i* has been driven, which, with the cap *h*, hinged to the lever, are placed in position on the standard. These parts, thus connected, are clearly shown in Figs. 1, 2, and 3 in position to be operated upon by the cutters fitted in the rotating wheel.

At *o* is represented a steady-bar, fitted cross-wise of the under sides of the frame-beams, having its end extending outward in front of the cutter-wheel in such position that the swinging standard G will be supported against its vertical side, to give it firmness to resist the action of the cutters in operating on the billet of wood to produce the feathers.

At *o'* is represented a guard-plate provided

with an angle foot-plate, *p*, by means of which it is fitted in position on the frame by suitable bolts. This guard-plate, from its fastening, rises parallel with the face-wheel, and is in position to receive the feather-shavings as cut from the billets, and the wheel, passing over the feather-shavings as they leave the cutters, delivers them, comparatively, a straight feather-shaving.

In the manufacture of my improved feathers with the machine herein described, having the several parts constructed and arranged substantially as set forth, and the face-wheel, carrying the cutters in motion, revolving in the direction indicated by the arrow, the operator takes hold of the handle of the spindle with his right hand, and by means of the spindle-handle he is enabled to turn the billet fitted to the spindle to the right or left, back and forth, in an oscillatory manner; or he can change its position to present any side of the billet to the cutters in the face-wheel in such a manner as to continually present a different portion of the billet to the cutters, or can cause it to rotate in contact therewith, and by means of the hand-lever, with his left hand, can press the billet against the face of the wheel, raise or lower it to properly engage the cutters, and can move it horizontally to present it in its whole length, or any part thereof, to the cutters. By these means I am enabled to produce wood feathers cut lengthwise with the grain of the wood, and of the form represented at H, having its center portions of greater thickness than its edges. The feathers, however, will not all be of this regular form represented in the drawings, but all will have thin edges and fuller center portions, substantially as represented and as herein described.

At I is represented a billet, on the end of which is represented sectional views of some of the cuts produced in the manufacture of my improved feathers. These continued, the billet will be reduced to a small core, substantially such as represented at K.

At L is represented a billet in which transverse saw-cuts, as at *s*, are produced. This billet, when exposed to the cutting operation, as hereinbefore described, will produce feathers of a length equal to the distance between the transverse cuts, and these cuts can be varied to any practical extent within the limits of the billets, to produce feathers varying in length, and the thickness of the feathers can be varied to any practical extent by the adjustment of the cutters.

From the foregoing description it will be seen that in the production of feathers by my improved machine the cut by which they are produced is a drawing cut, and the cutters or bits, revolving in a vertical plane, begin their cutting action endwise of the wood billet, this disposition of cutters and wood operating to produce a bright and elastic feather.

Instead of the spindle-handle hereinbefore described, a crank-handle or winch, as represented in dotted lines at Fig. 2, may be employed, by means of which the billet may be rotated in contact with the cutters, and the relative movement of the billet and cutters will determine the form and size of the feathers in cross-section.

In practice, it is found that the soft woods—such as bass, aspen, cotton-wood, or woods of the poplar family—produce a fine article of feather-shavings; but many other varieties of the tougher and harder woods produce a fine article.

The wood feathers produced by the machine herein described are adapted to a great variety of upholstering, packing, and other purposes where a light, cheap, and elastic filling material is required.

I claim—

1. The combination, with a face-wheel provided with cutters, a hand-lever, and a spindle supported by said hand-lever, of a rotary cap fitted on the free end of an oscillating standard and a hinge connecting the cap and said hand-lever, substantially as set forth.

2. The combination, with a vertical rotary face-wheel provided with radial cutters and a spindle located in front of the cutter-wheel, of an upright fender-plate secured to the main frame in rear of the face-wheel and in line with the lower portion thereof, substantially as set forth.

3. The combination, with a face-wheel provided with cutters, a spindle, and a hand-lever in which the spindle is supported, of a cap to which the hand-lever is hinged to move in a vertical plane, a standard to which the cap is pivoted, and a rotary shaft to which said standard is secured, substantially as set forth.

4. The combination, with a face-wheel provided with cutters, of a spindle secured to an oscillating standard, which latter is attached to a transverse rotary shaft the ends of which are journaled in the machine-frame.

5. The combination, with a spindle, a hand-lever supporting it, of an oscillating standard and a hinge upon the upper leaf of which the hand-lever is mounted, the lower leaf being secured to the free end of said standard.

6. The combination, with a spindle, a hand-lever supporting it, of an oscillating standard and pivotal connection between the lever and standard, said pivotal device being adapted to serve as a fulcrum on which the hand-lever is moved in a vertical plane at right angles to the plane in which the wheel revolves.

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