(No Model.) 2 Sheets—Sheet 1.

J. G. AUSTIN.

WOOD WORKING MACHINE.

No. 271,014. Patented Jan. 23, 1883.

FIG. 1.

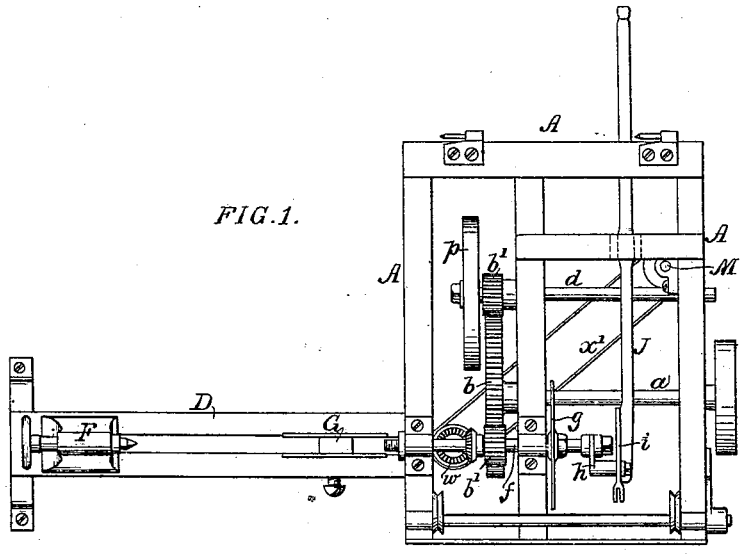
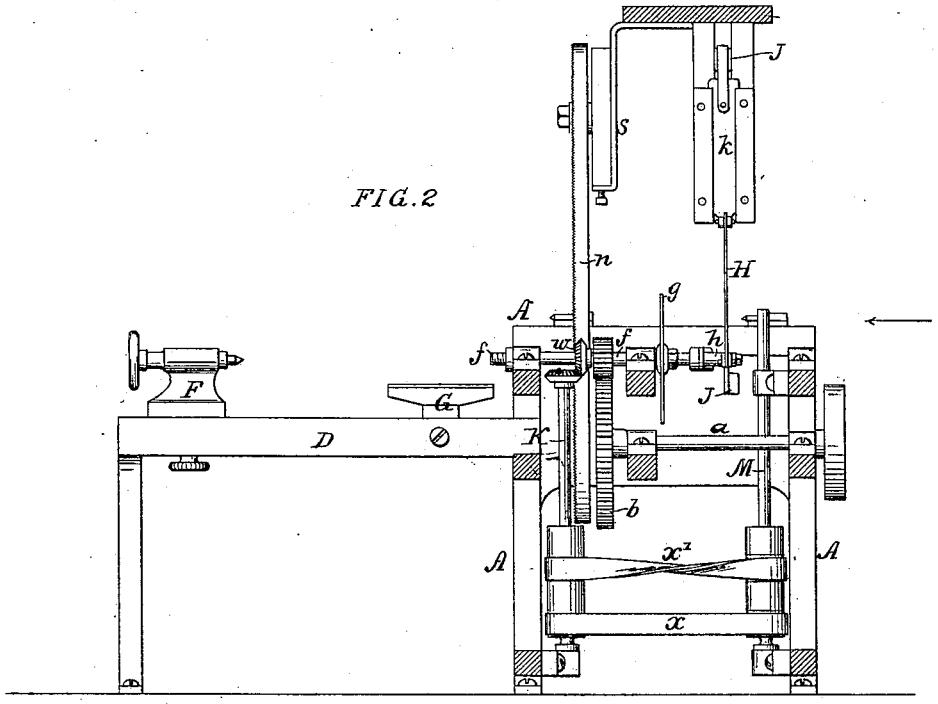


FIG. 2



WITNESSES:

Harry Drury

Hamilton H. Turner.

INVENTOR:

Joseph G. Austin

by his attys.

Howson & Sons

(No Model.) 2 Sheets—Sheet 2.

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FIG. 3

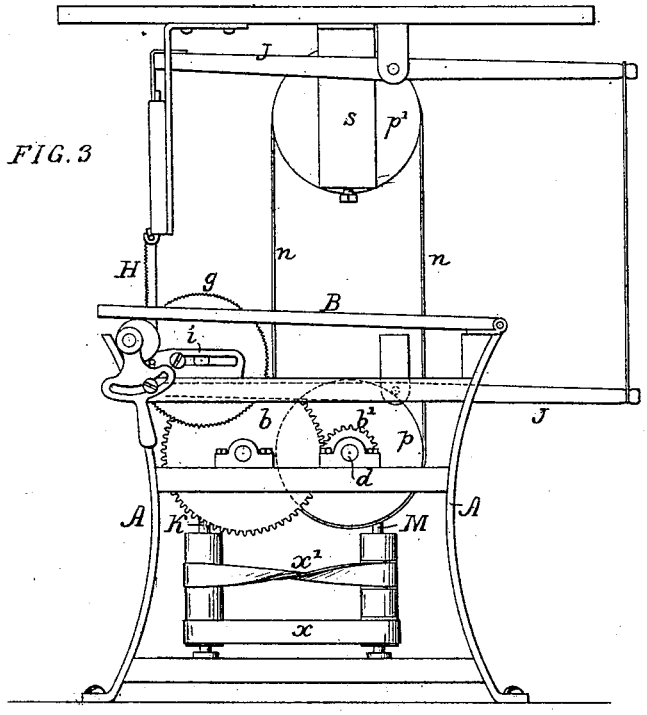


FIG. 6

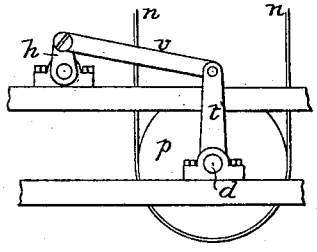


FIG. 4

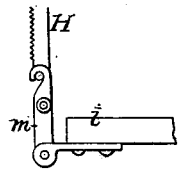
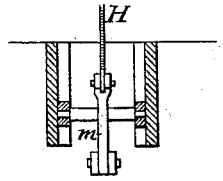


FIG. 5



WITNESSES:

Harry Drury
Hamilton H. Turner.

INVENTOR:

Joseph G. Austin
by his Attys.
Howson & Sons

UNITED STATES PATENT OFFICE.

JOSEPH G. AUSTIN, OF CAMDEN, NEW JERSEY.

WOOD-WORKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 271,014, dated January 23, 1883.

Application filed August 18, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH G. AUSTIN, a citizen of the United States, residing in Camden, New Jersey, have invented certain Improvements in Wood-Working Machines, of which the following is a specification.

The object of my invention is to provide carpenters and other wood-workers with a cheap and compact machine for performing the various operations of sawing, turning, boring, drilling, molding, &c., known under the general name of "mill-work," and usually performed by means of separate machines.

In the accompanying drawings, Figure 1, Sheet 1, is a plan view of my improved wood-working machine, the work-table and the parts above the same being removed; Fig. 2, a longitudinal section of the machine; Fig. 3, Sheet 2, a view of the end of the machine, looking in the direction of the arrow, Fig. 2; and Figs. 4 to 6, inclusive, detached views of parts of the machine.

A is the main frame of the machine, which supports the work-table B, a frame, D, projecting laterally from one end of the said frame A, as shown in Figs. 1 and 2.

To bearings on the frame A is adapted the driving-shaft *a*, to which power is applied by hand or by a belt from any adjacent shaft, said shaft *a* having a spur-wheel, *b*, which gears into pinions b' b^2, the former on a shaft, *d*, and the pinion b^2 on a spindle, *f*, both shaft and spindle being adapted to suitable bearings on the frame.

The spindle *f* carries a circular saw, *g*, and also serves as the spindle of a lathe, the end of the spindle projecting beyond the frame A, and being adapted for the reception of a face-plate, chuck, or tool, in the same manner as the spindle of an ordinary lathe. A tail-stock, F, is adapted to slide on the frame D, and to act in conjunction with the spindle *f*, to constitute a turning-lathe, an adjustable tool-rest or dog, G, being also combined with the frame D, as shown in Figs. 1 and 2.

The spindle *f* also serves as a means of operating a jig-saw, H, a crank, *h*, on the end of the spindle having a pin adapted to a slotted plate, *i*, on the lower lever J of the saw-frame. Said saw-frame comprises two levers, J, one hung to bearings on the frame A and the other to bearings on the ceiling, roof-joist, or some other available support above the table B, the rear ends of the levers being connected by an elastic cord, wire, or other suitable medium, so as to impart the proper degree of tension to the saw-blade H, which is hung at the upper end to a guided slide, *k*, and is connected at the lower end by means of a link, *m*, to the slotted plate *i*, a transverse bolt on the link-carrying blocks adapted to the slotted guides on the table B, so that the saw is prevented from shaking at the lower as well as the upper end, and lateral steadiness is thereby insured. (See Figs. 4 and 5.)

The shaft *d* carries a pulley, *p*, round which and round another pulley, p', above the table B passes a band-saw, *n*, the pin on which the pulley p' turns being carried by a slide adjustable vertically in a hanger, *s*, so that the saw may be kept under proper tension when at work, and the application of the saw to or its removal from the pulleys readily effected.

The peripheries of the pulleys *p* and p' are preferably clothed with rubber, leather, or like material to insure proper frictional contact of the saw therewith.

When one of the saws is being used the others are generally thrown out of gear, and for this reason the pinions b' b^2 are preferably so constructed that they can be readily clutched to or released from their shafts.

In some cases it is desirable to give the band-saw *n* a vertical reciprocating movement, instead of a continuous movement in one direction, and in order to effect such a movement of said saw *n*, I provide the shaft *d* with an arm, *t*, which can be connected by a rod, *v*, with the pin of the crank *h* on the spindle *f*, (see Fig. 6,) the rotation of the spindle imparting a rocking movement to the shaft *d*, and thus causing a forward and backward movement of the saw *n*.

To bearings on the frame A are adapted two vertical shafts, K and M, arranged diagonally opposite each other in the frame, the shaft K receiving movement from the spindle *f* by means of bevel-gearing *w* and the shaft M, projecting at the upper end through the table B, and being adapted for the reception of a boring-tool or cutter-head, the two shafts being connected by a straight belt, *x*, and a

crossed belt, x', and the shaft M having suitable fast and loose pulleys for the belts, so that said shaft can be driven in either direction. When the shaft M has to turn in one direction only, one of the belts may be dispensed with.

The top or table B is pivoted to the frame A at the rear of the same, and the front end of the table is acted upon by cams or eccentrics, as shown in Fig. 3, so that said table can be readily elevated or depressed at the front end in order to decrease or increase the projection of the saw g above the table.

The above-described machine comprises, in compact and convenient form for operation by a single driving-shaft, mechanism for performing various kinds of mill-work, and the combined machine shown can, owing to the fewness of its parts, be manufactured very cheaply.

I am aware that it is not new to combine in one structure mechanism for performing various wood-working operations, and I therefore do not claim broadly such a machine, the main advantages of my invention being the fewness and simplicity of the parts employed, directness in the transmission of the power, and the convenient arrangement of the several parts, so that but one flat work-table is required.

I claim as my invention—

1. The combination of the frame A, its table B, and the laterally-projecting frame D, having a tail-stock, F, with the spindle f, carrying a circular saw, g, and adapted to bearings on the frame A in line with the frame D and its tail-stock, as set forth.

2. The combination of the frame A, its table B, and the laterally-projecting frame D, having a tail-stock, F, with the spindle f, having a circular saw, g, and crank h, and adapted to bearings on the frame A in line with the frame D and its tail-stock, as set forth.

3. The combination of the frame A and its table B, the spindle f, with its saw g, pinion b^2, and crank h, the saw-frame J, the shaft d, with its pulley p and pinion b', the pulley p', and saw n, and the driving-shaft a, having a spur-wheel, b, gearing into said pinions b' and b^2, as set forth.

4. The combination of the frame A and its table, the spindle f, the band-saw n, and pulleys $p\,p'$, the shaft d, the pinions $b'\,b^2$, the shaft a, with its spur-wheel b, the vertical shafts K and M, arranged diagonally opposite each other, the bevel-gears w, and the belts connecting the shafts K and M, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH G. AUSTIN.

Witnesses:

HARRY DRURY,

HARRY SMITH.