

(No Model.)

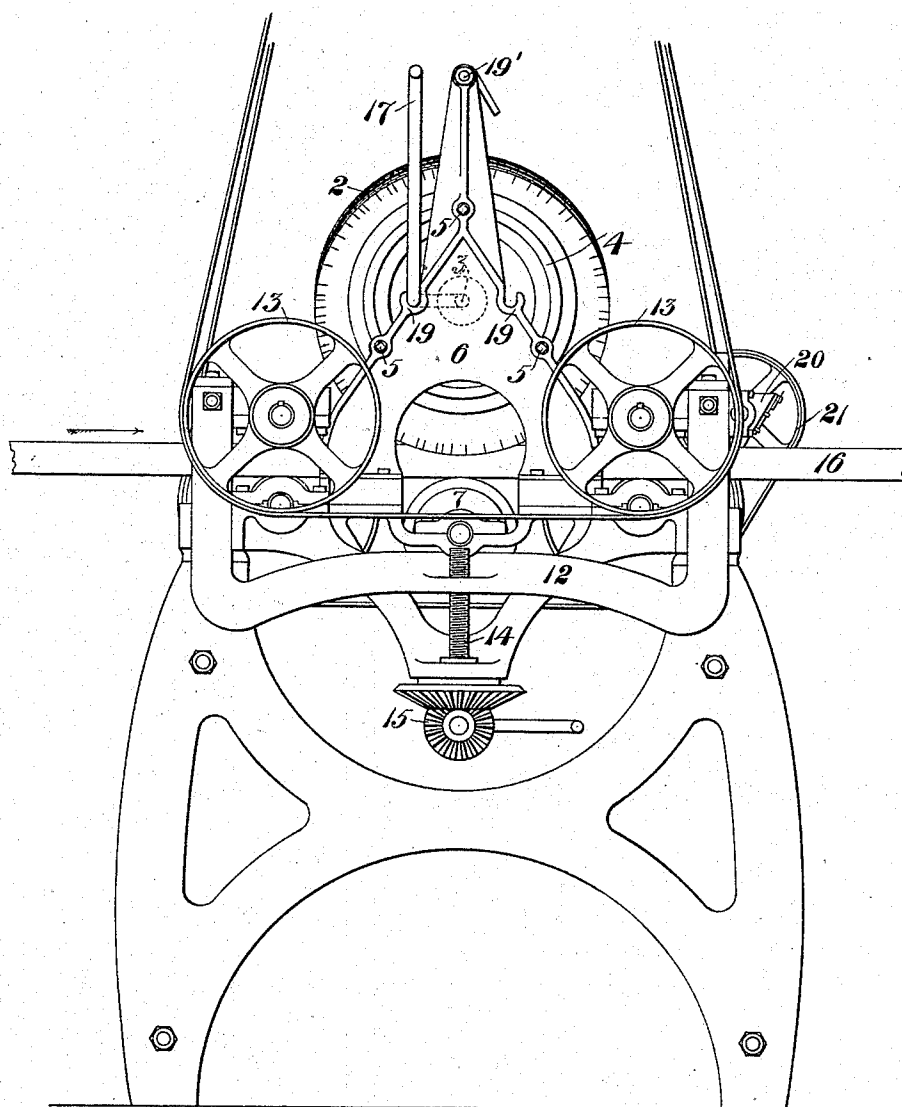
5 Sheets—Sheet 1.

W. W. GRIER.
WOOD INDENTING MECHANISM.

No. 537,528.

Patented Apr. 16, 1895.

Fig. 1.



WITNESSES

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(No Model.)

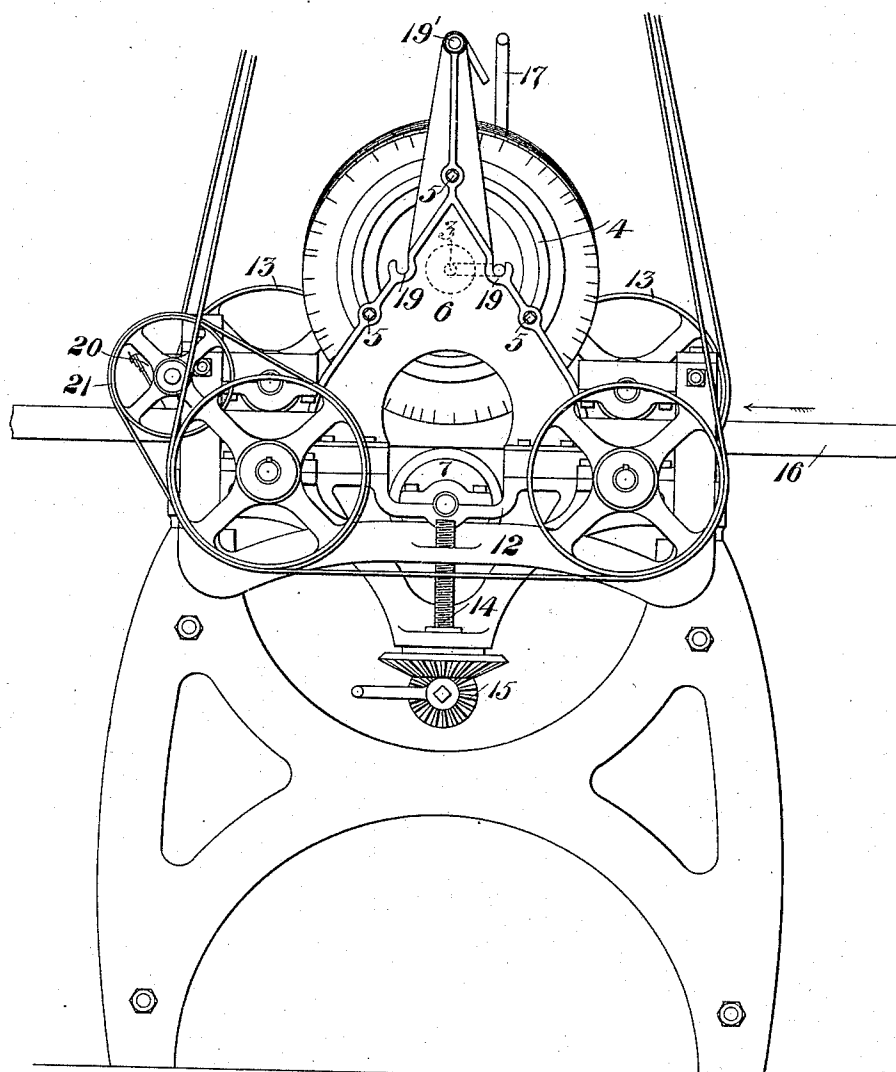
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Fig. 2.



WITNESSES

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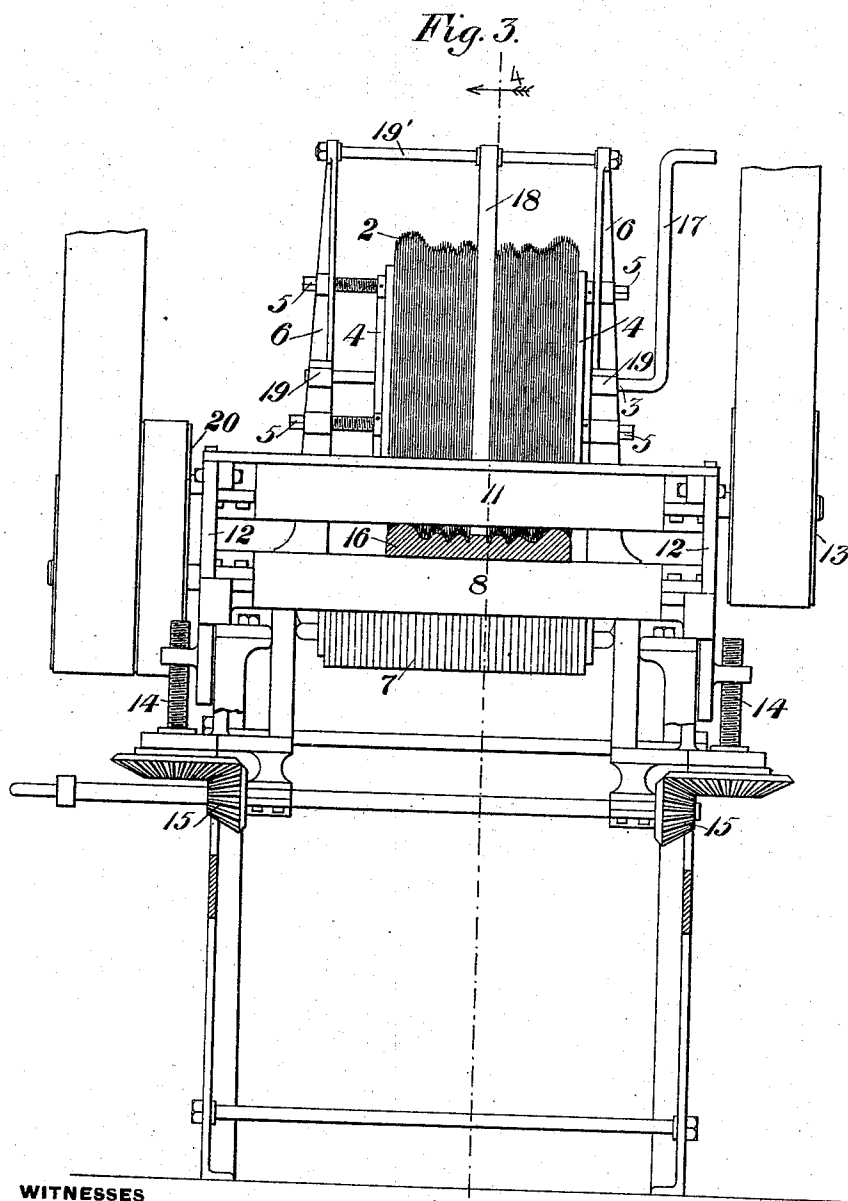
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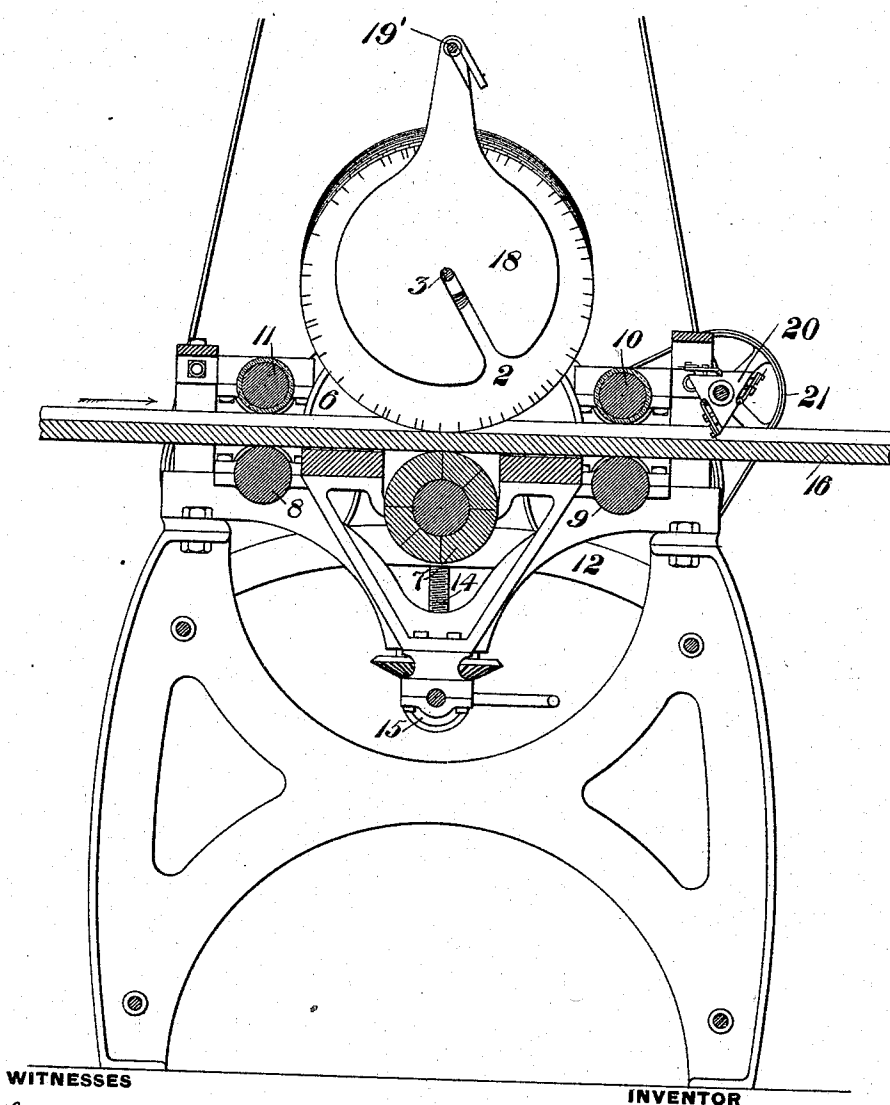
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Fig. 4.



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Fig. 5.

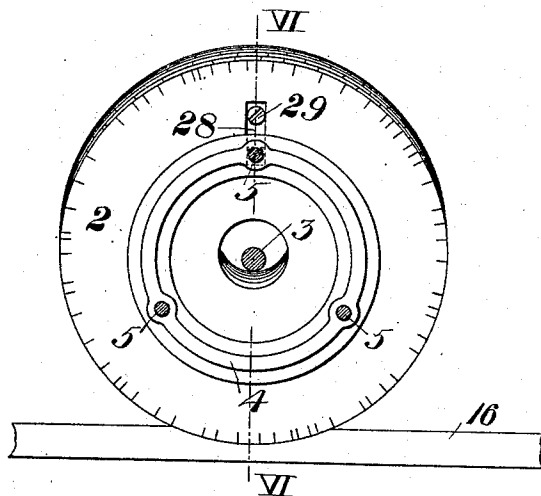


Fig. 6.

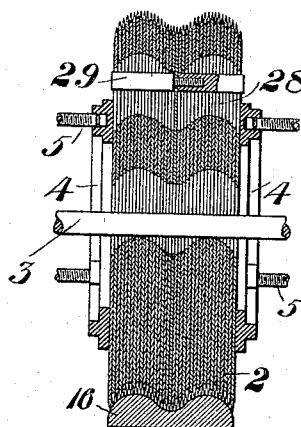


Fig. 7.

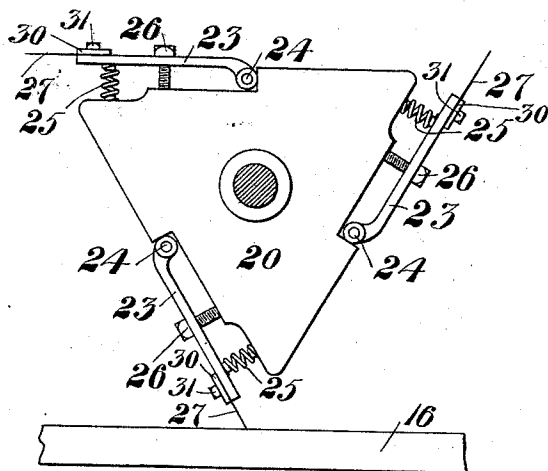
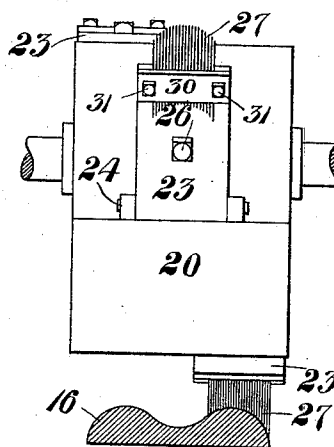


Fig. 8.



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM WATSON GRIER, OF HULTON, PENNSYLVANIA.

WOOD-INDENTING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 537,528, dated April 16, 1895.

Application filed November 4, 1892. Serial No. 450,963. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WATSON GRIER, of Hulton, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Wood-Indenting Mechanism, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an end elevation of a wood-graining machine constructed in accordance with my invention. Fig. 2 is an end elevation of the opposite end of the machine. Fig. 3 is a front view of the machine. Fig. 4 is a vertical cross-section on the line IV—IV of Fig. 3. Fig. 5 is a side elevation, showing a radially directed stop in each disk. Fig. 6 is a vertical section on the line VI—VI of Fig. 5. Fig. 7 is a side elevation, showing a supplemental indenting device, and Fig. 8 is an end elevation thereof.

Like symbols of reference indicate like parts in each view.

The object of my invention is to provide means by which the surface of wood, especially such irregular surfaces as are on wood-moldings, &c., can be indented for the purpose of ornamenting them, principally for the purpose of causing them to simulate the natural surface appearance of oak and other hard woods. The machine which I have devised affords convenient and effective means for doing this work and is automatically adjustable so that without any special change it will indent the surface of moldings of any contour.

The indenting mechanism comprises a roller, composed of a series of parallel disks 2, set side by side on a central shaft 3, the holes in the centers of the disks being sufficiently larger than the shaft to permit free vertical motion to the disks. The peripheries of the disks are toothed so that they may be adapted readily to indent or puncture the wood. The disks are held from lateral movement by means of vertical checks or rings 4, adapted to be adjusted inwardly by bolts 5, which pass through threaded sockets in the frame 6 of the machine. This manner of attachment of the rings renders them laterally adjustable. Directly beneath the series of

disks is a supporting and resistance roller 7 which is journaled in stationary bearings in the machine frame, and at each side of it is another supporting-roller 8, 9. In order that the disks 2 may be supported by the roller when they are not in use without injury to their sharpened edges, I prefer to construct this roller 7 of a metal core, having a wooden covering.

The means for forcing the molding to be indented through the machine comprise feed-rollers 10, 11, which are journaled in a vertically-adjustable frame 12, being situated preferably directly above the supporting-rollers 8, 9. They are driven by belt-pulleys 13, or other suitable gearing, journaled in and carried by the frame 12, and said frame is made vertically adjustable by means of adjusting screws 14, which may be driven simultaneously by gearing 15. By raising the frame 12, the rollers 10, 11, may be separated and adjusted, in order to admit moldings of different sizes.

In order to preserve the disks in the positions with relation to each other in which they are first set, I provide them with radially-directed slots 28, through which extends a bolt 29. This bolt and the slots, while permitting the disks to move freely independently of each other, cause them to rotate in unison and thus preserve their relative arrangement and enable them to be adjusted so that in indenting they shall cut a pattern on the wood.

The operation of the machine is as follows: A molding strip 16 is introduced between the feed-rollers 8 and 11, and the frame 12 is adjusted vertically so as to cause the roller 11, which may be covered with india-rubber, to bear upon the surface of the molding. The disks 2 are elevated in order to permit introduction of the molding, by moving a lever 17, which is connected with cranks, having their axes in journals 19 on the frame, and carrying at their ends the central shaft of the disks. The effect of thus turning the lever 17 is to elevate the shaft and to raise the series of disks. The molding 16 is then advanced into the machine by revolution of the feed-rollers, and when it is brought under the same the disks are lowered upon its surface. Each disk being free to adjust itself vertically in-

dependently of the others, will bear at its edge upon the surface of the molding, as shown in Fig. 3, and will press thereon by gravity, accommodating itself automatically to the elevations or depressions of the molding. Then as the molding-strip is fed forward, the disks resting thereon will be turned axially and will impress upon the wood series of indentations corresponding to the teeth on the disks. When the molding has been fed through the machine, another strip may be substituted therefor, and the operations above described repeated.

It is desirable in some cases that the molding should not be indented along certain lines. I illustrate in Fig. 3 how I provide for this. I use a separating-plate 18, which is suspended from a cross-bar 19' of the machine-frame and fits between two adjacent disks. It thus acts as a dummy to separate the disks and to leave the action of the machine-blank along the strip of the molding immediately beneath it. The means by which the disks are supported laterally, being adjustable as above described, not only permits the use of as many or few disks as may be required, but enables one or more of these separators to be interposed at proper places.

In order to supplement the action of the indenting disks, I prefer to employ the mechanism shown in Figs. 4, 7 and 8. It consists of a rotatory roller or frame 20, driven by suitable driving-mechanism 21, and having projecting knives or needles, held to the roller or frame preferably by a flexible connection, constructed preferably as follows: 23, 23, are bars pivoted to the frame or roller at points 24, and having springs 25 to cushion their action, and bolts 26 to retain and adjust them. 27 are needles secured to these bars and projecting at an oblique angle to the surface of the roller. The roller is journaled above the path of the molding strip, and as it is rotated the projecting needles strike and wipe the surface of the wood, impressing an irregular pattern thereon. The needles are clamped to the bars 23 by plates 30 and bolts 31, affording means by which the projection of the needles can be adjusted to cause them to conform to the contour of the molding. This wiping indenting device may be employed independently of the other parts of the machine, and, broadly considered, the claims relating thereto are not limited to the attachment of the needles to the pivoted bar.

The advantages of my invention will be appreciated by those skilled in the art.

The machine is simple and durable, and is an efficient means for indenting moldings,—a work that hitherto has not been accomplished successfully and which constituted a

practical difficulty to the success of methods of making artificially ingrained wood.

Modifications in the form, construction and relative arrangement of the parts may be made by those skilled in the art without departure from my invention as defined in the following claims, since

What I claim is—

1. Indenting mechanism comprising a series of indenting knives, supported by the material to be indented, said knives being independently movable edgewise and urged against the material by gravity; substantially as described.

2. Indenting mechanism comprising an upright series of disks, said disks being independently movable edgewise, and urged by gravity against the material to be indented; substantially as described.

3. Indenting mechanism comprising a series of rotatory disks independently movable edgewise and having their peripheries adapted to indent; substantially as described.

4. Indenting mechanism comprising a series of parallel disks having their peripheries adapted to indent, and a shaft which passes through eyes in said disks, said eyes being of greater diameter than the shaft to permit independent edgewise motion of the disks; substantially as described.

5. Indenting mechanism comprising an upright series of parallel disks independently movable edgewise and urged downwardly by gravity, but connected by slotted connections to cause their united rotation; substantially as described.

6. In indenting mechanism, a rotatory indenting frame or roller, having wiping indenters; substantially as described.

7. In indenting mechanism, a rotatory indenting frame or roller, having wiping indenters secured thereto by a flexible spring connection; substantially as described.

8. In indenting mechanism, a rotatory indenting frame or roller, having wiping needles; substantially as described.

9. In indenting mechanism, a series of rotatory parallel axially unconfined disks, side cheeks or plates between which they are confined laterally, and adjusting mechanism; substantially as described.

10. In indenting mechanism, a series of rotatory disks independently movable edgewise, and a dummy separator interposed between adjacent disks; substantially as described.

In testimony whereof I have hereunto set my hand this 25th day of October, A. D. 1892.

WILLIAM WATSON GRIER.

Witnesses:

THOMAS W. BAKEWELL,
W. B. CORWIN.