June 23, 1925.

1,543,100

W. D. CRAIG

WOOD FEATHERING MACHINE

Filed Dec. 5, 1923

Fig. 1.

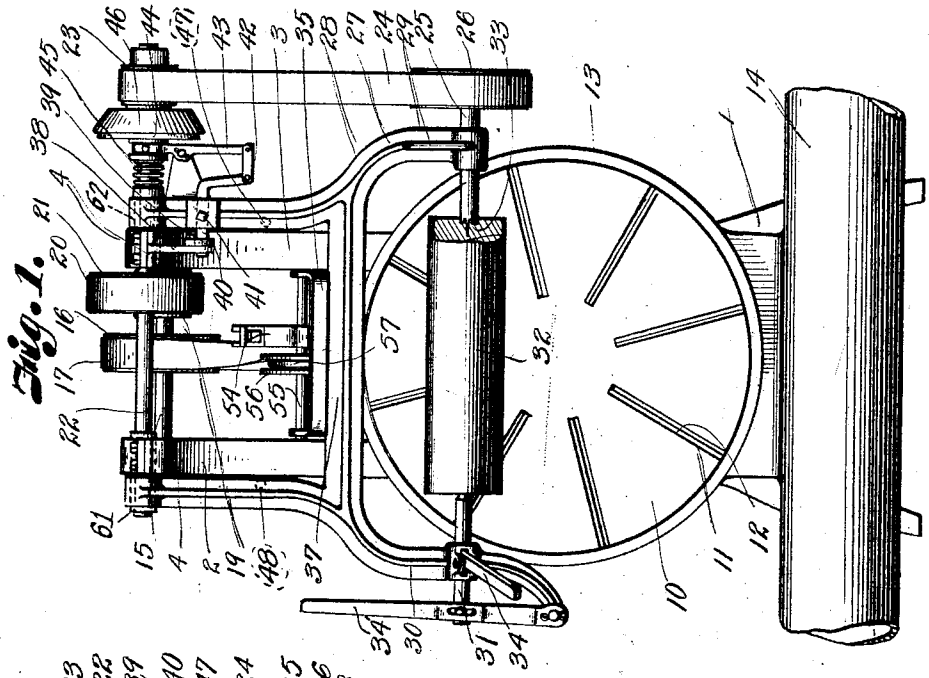


Fig. 2.

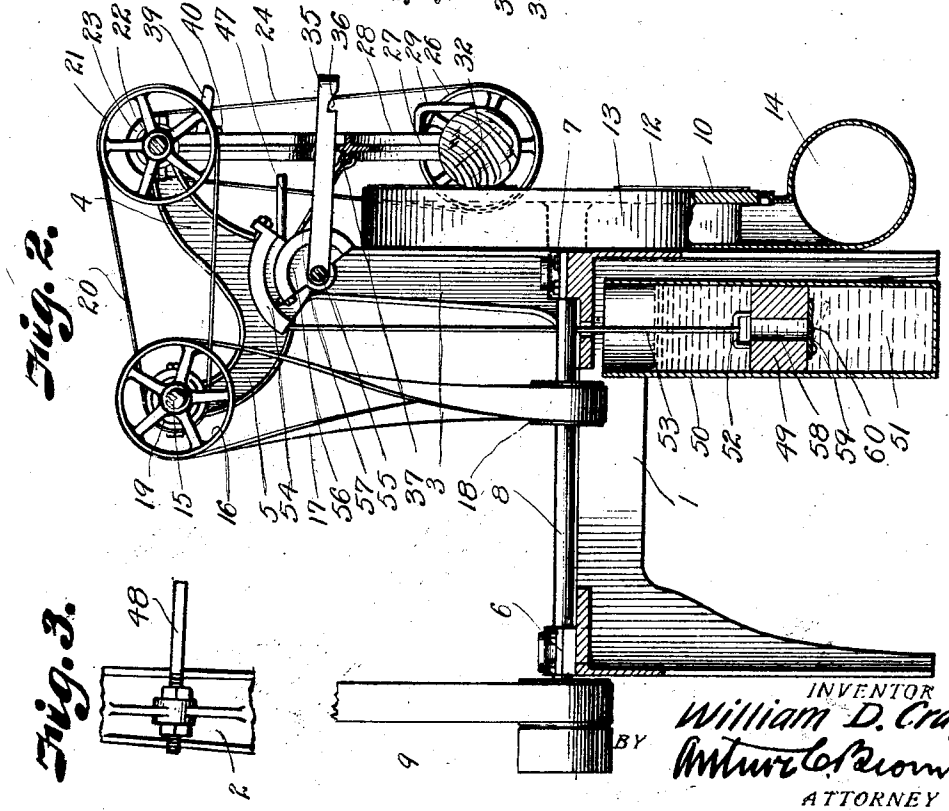


Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM D. CRAIG, OF KANSAS CITY, MISSOURI.

WOOD-FEATHERING MACHINE.

Application filed December 5, 1923. Serial No. 678,658.

To all whom it may concern:

Be it known that I, WILLIAM D. CRAIG, citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Wood-Feathering Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to a machine for producing a wood product, intended to be used as a filling medium in packing, upholstering and the like and it is particularly designed to produce a product such as is disclosed in my United States Patent 860,853 of July 23, 1907, the construction being such that there are certain novel advantages and improvements over my United States Patent #848,884 of April 2, 1907.

The invention consists in certain novel parts and combination of parts, all of which will be specifically described hereinafter, reference being had to the accompanying drawings, in which—

Fig. 1 is a front elevational view of a wood shaving machine constructed in accordance with my invention.

Fig. 2 is a view partly in side elevation and partly in section of the machine, and

Fig. 3 is a detailed view of one of the work frame stops.

Referring now to the drawings by numerals of reference—

1 designates a frame having standards 2 and 3, each carrying a forwardly projecting upwardly curved arm 4 and a rearwardly projecting upwardly curved arm 5, the arms 4—4 and 5—5 supporting shafts as will be presently explained. Mounted in bearings 6 and 7 on the frame 1 is a drive shaft 8, driven by any suitable power, for example by a motor belt 9.

At the opposite end of the shaft 8 is a disk 10 having radial slots 11 in which are mounted shaving knives 12. The periphery of the disk is enclosed by a housing 13 communicating with a conduit 14 through which air may pass to provide a pneumatic conveyor for carrying away the shavings to a suitable point where they may be collected.

Mounted in the arms 5—5 is a counter-shaft 15 carrying a pulley 16 about which is a belt 17 driven by a pulley 18 on the shaft 8. The counter-shaft 15 carries a pulley 19 which drives a belt 20 passing around the pulley 21 on the shaft 22 mounted in the arms 4—4 on the standards 2 and 3. The shaft 22 carries a pulley 23 which drives a belt 24 communicating motion to a stub shaft 25 through the medium of the pulley 26. The stub shaft 25 is mounted in the arm 27 of a swinging frame 28 loosely mounted on the shaft 22 and adapted to be moved by the handle 29. The swinging frame 28 carries an arm 30 in which is a tail piece 31 aligning with the shaft 25 so that the work or block 32 may be secured between the ends of the shafts 25 and 31, it being observed by reference to Fig. 1 that the shaft 25 carries tines 33 which may be forced into the end of the block 32 so that the block 32 will turn with the shaft. The shaft 31, including its clamp 34 and the lever 34′ is substantially like a tail block mechanism of an ordinary turning machine. The swinging frame 28 is adapted to be held outwardly by a latch bar 35 which is provided with a notch 36 to engage a rib 37 on the frame so that the frame will be held in such a position to permit the introduction of the block or work 32. The block 32 of wood is preferably round or substantially so when it is inserted between the members 31 and 25, and when the block is being inserted it is desirable that the shaft 25 is not turned, so I have provided means for preventing this.

By reference to Fig. 1, it will be seen that the bracket 38 on the standard 3 carries a cam arm or finger 39 on which the arm 40 of an elbow lever is adapted to ride. The elbow lever is pivoted at 41 on the arm 27 and it is connected to a link 42 in turn connected to a clutch lever 43 to operate the cone clutch 44 to separate the two members of the clutch on the shaft 22 but when the frame 28 swings inwardly the elbow lever 40 will be out of contact with the finger 39 so that the spring 45 can move the cone 44 into engagement with the clutch member 46 to connect the two aligning members of the shaft together.

The inward swinging movement of the frame 28 will be limited by the stop fingers 47 and 48 so that when the block has been acted upon by the knives 12 to reduce its

diameter to a minimum, the frame will stop on its inward swinging movement, this being desirable in order to prevent the knives from contacting with the metal parts of the machine. The frame 28 is urged inwardly by a dash pot or liquid actuated piston 49 in the cylinder 50 containing a liquid 51. The piston is provided with a loop 52 to which is connected a strap or cable 53 on the segment 54 carried by the shaft 55 on which the latch 35 is mounted. There is another segment 56 on shaft 55 connected to the frame by a strap or flexible connection 57. The piston 49 has a center opening 58 adapted to be opened when the piston is moved in one direction by a flap valve 59 having a central opening 60.

The frame 2 is suspended on sleeves 61 and 62 in boxes in the standards 2 and 3 and the shaft 22 is journaled in the sleeves 61 and 62 so that the shaft 22 need not carry the weight of the frame 28.

When the swinging frame 28 is pulled outwardly the piston will be raised, causing the flap valve to open and permitting it to easily pass through the liquid 51 in which it is submerged, then the latch can be caused to engage the work frame while the blocks are being removed or applied. Then the latch is released and the piston will tend to drop by gravity toward the bottom of the cylinder 50. Since the piston is submerged in the dash pot or cylinder 50, the work will be urged against the knives with a steady pull, eliminating liability of the jerky motion which occurs with some kinds of wood where a weight only is used. As a result a better product is provided. It is to be understood of course that the knife carrier or disk 10 is driven at a very rapid speed and that the work is constantly rotating as the knives are operating upon it. Therefore I am enabled to provide a large amount of shavings in a minimum space of time and by using my machine a product is provided which is soft and pliable and which has marked advantages over the product commonly known as excelsior for packing or for stuffing mattresses or the like and while I have specifically described in detail the preferred construction of my invention, I do not wish to be limited to the exact construction as shown but I reserve the right to make such changes in form, proportion and minor details of construction as come within the scope of the appended claims.

What I claim and desire to secure by Letters-Patent is:

1. In a machine of the class described, a frame, a rotatable disk carried by the frame having knives radially disposed therein, standards on the frame, a shaft carried by the standards, segments on the shaft, a swinging work holding carriage movable toward and away from the disk, a dash pot, a piston in the dash pot, a flexible connection between the piston and one of the segments and a flexible connection between the carriage and the other segment and means for causing rotative movement of the work.

2. In a machine of the class described, a work carriage feed comprising a carriage frame pivoted at its upper end and having inward swinging movement, a cylinder, a piston in the cylinder having a central opening, a liquid in the cylinder, completely submerging the piston, a shaft, a segment on the shaft, a flexible connection between the carriage and the segment, another segment on the shaft and another flexible connection between it and the piston.

In testimony whereof I affix my signature.

WILLIAM D. CRAIG.