Oct. 4, 1932. P. ROUNSEVELLE 1,881,031

SANDING MACHINE

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FIG. 1.

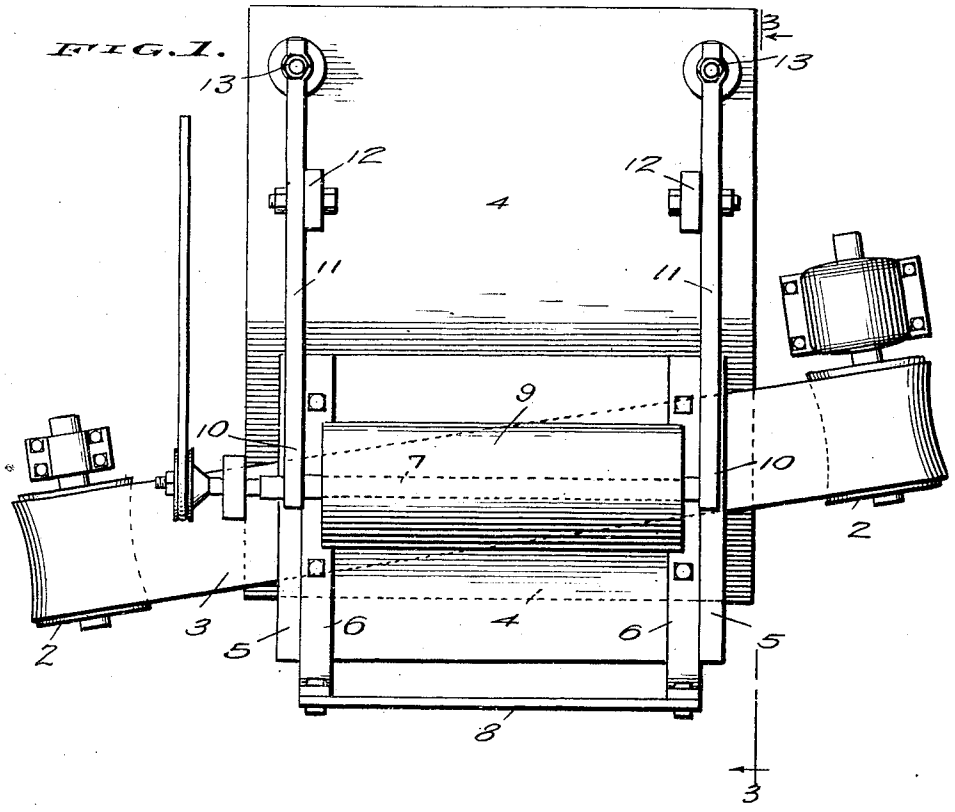
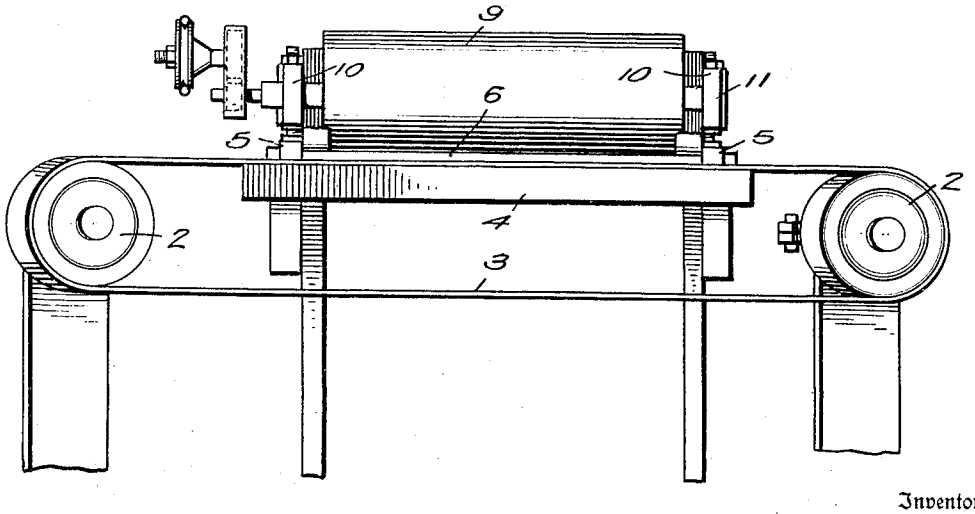


FIG. 2.



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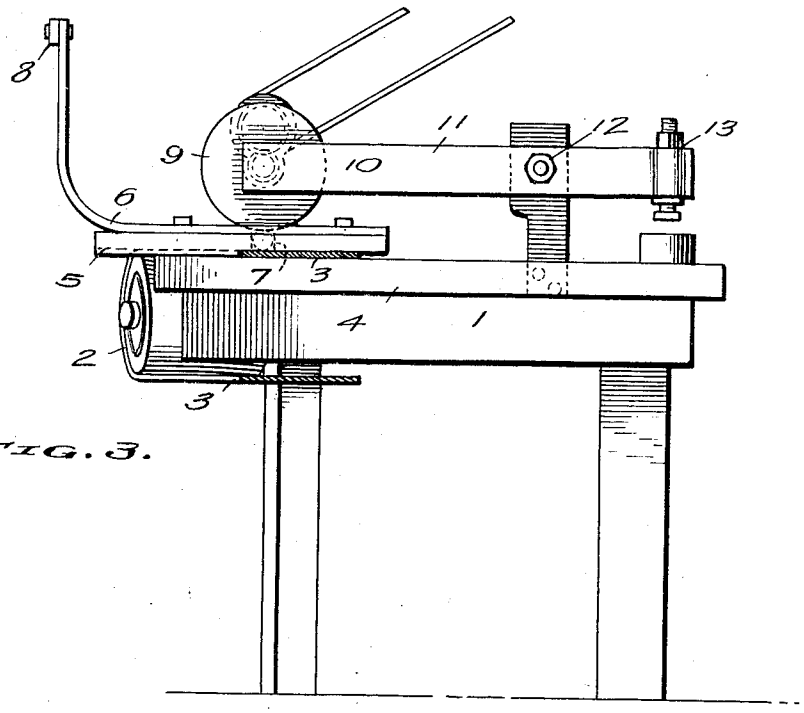


FIG. 3.

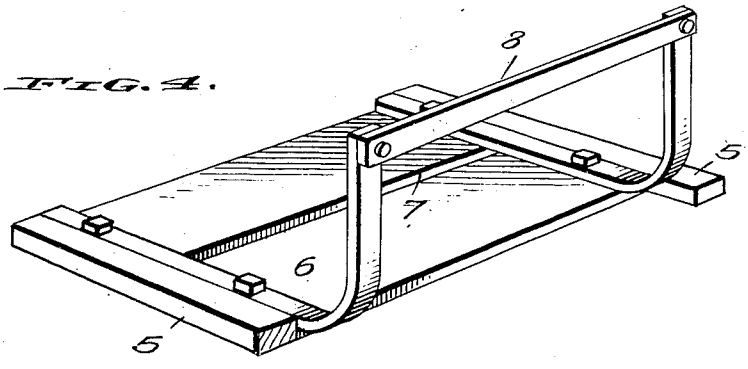


FIG. 4.

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Patented Oct. 4, 1932

1,881,031

UNITED STATES PATENT OFFICE

PHILLIP ROUNSEVELLE, OF HAZEL CREST, ILLINOIS

SANDING MACHINE

Application filed October 22, 1930. Serial No. 490,490.

The present invention relates to sanding machines, and to that class of sanding machines, in which the work is to be sanded longitudinally, or with the grain.

One of the principal objects of the present invention is to provide a machine in which the work may be sanded with the grain, instead of across the grain as is done at present in this class of work.

Another object is to provide means for rotating round work while it is being sanded longitudinally to produce perfectly cylindrical spindles.

Another object is to provide means for sanding different sized work, by adjustment of the machine to such work.

Another object is to provide means for sanding objects at varying thickness along their length, to provide tapered spindles, or other shapes.

With the above and other objects in view, which will more particularly appear in the specification which follows, I have illustrated in the accompanying drawings, and described in the present specification, one embodiment of my machine as adapted to sand dowels and spindles longitudinally as they are being rotated in said machine. In the drawings herewith, in which like numerals refer to the same parts throughout the various views,

Figure 1 is a top plan view of said sanding machine.

Figure 2 is an elevation of said machine, taken from in front.

Figure 3 is an end view taken from the right in Figure 1.

Figure 4 is a detail view of the slide holder.

The sanding of round or cylindrical objects is now generally accomplished by applying sanding material to the rapidly rotating work, thereby sanding the said work crosswise to the grain. The generally accepted principle in sanding wood, is to sand the wood along the line of the grain, or longitudinally, to secure the best results. The present machine is designed to sand the wood with the grain, and thus produce more perfectly sanded dowels and cylindrical work than is done by any other means. The machine hereinafter described, not only produces better sanded work, but work of uniform diameter throughout its entire length, or work that is perfectly tapered from end to end, when such tapering is desired.

The attached drawings show one embodiment of my said machine, the numeral 1 representing the bench or stand upon which said machine is mounted. Numerals 2, 2 indicate the rotating drums upon which the sanding belt 3 is mounted for operation, power being applied to one of said drums in any usual manner for such purpose. A flat bed 4 is provided, over which the sanding belt passes, and the bed provides a flat bed for said belt when it is being employed in sanding objects as hereinafter described. Guides 5, 5 are provided at the sides of the bed to form a slideway for the slide-holder 6 to slide backward and forward above said bed and said belt lying thereon. At 7 a slot is provided in the slide-holder of sufficient width and length to receive the work to be sanded. The slide-holder is usually made rectangular in shape, adapted to slide on the guides 5, 5 and of a thickness of less than the work to be sanded, it is also provided with a handle 8 for convenience of operation.

It is apparent that interchangeable slide-holders may be employed, of suitable thickness and having slots of suitable size to best handle the work and also that several slots may be provided in said slide-holders and several objects put in said slide-holder to be sanded as it is being pushed across the said sanding belt as above explained.

Above the slide-holder and the bed I have mounted a drum 9 extending the entire width of the bed and slide-holder, mounted in bearings as 10, 10, and adapted to be rotated by suitable means, its axis being at approximately right angles to the direction of travel of the slide-holder. The bearings 10, 10 are preferably mounted to permit adjustment separately to raise or lower one or both ends of the drum to adapt it to the work being sanded. To accomplish this result, I have mounted the bearings 10, 10 in the free ends of the bars 11, 11, which said bars are pivotally mounted at 12, 12 respectively, and at the rear ends are provided bolts 13, 13

with suitable nuts to hold the said bars in rigid position, and to adjust them upward or downward from time to time as required. While other suitable means may be employed in place of the drum, and other means may be employed to raise and lower said drum, I find that this construction is well suited for the purpose, and readily permits the elevation of one end of the drum higher than the other end when sanding tapered spindles or other work of similar character not having the same diameter throughout its entire length.

The operation of my sanding machine is as follows: the drums 2, 2 are caused to rotate by the power means, and the sanding belt is thus moved rapidly across the bed 4. At the same time the drum 9 is also rotated, preferably at approximately right angles to the direction of travel of the sanding belt. The work to be sanded is placed in the slot of the slide-holder, which is pushed backward until work engages the sanding belt on the underside of the work, and the rotating drum 9 above the work. As the sanding belt is sanding the underside of the work longitudinally, the rotating drum by means of friction with the work, rapidly rotates the said work, thereby producing the gradual sanding thereof, until it is reduced sufficiently to pass beneath the drum 9, when it is free to pass beyond the sanding belt, and out of the machine. By this means I am able to sand the work, dowels or spindles to a perfectly cylindrical shape, and of uniform diameter, the diameter seldom varying more than two or three one-thousandths of an inch. As the work is sanded with the grain, I am able to produce much better results than any heretofore employed for such purposes.

While I have shown a drum 9 mounted in adjustable bearings to hold the work against the sanding belt, and to rotate it to present all surfaces to the sanding belt, other means may be employed to accomplish the same result, without departing from the spirit of my said invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is the following:—

1. In a sanding machine, the combination with a bed of a sanding belt passing above said bed, a work-holder slidably mounted upon said bed above the sanding belt and adapted to slide cross-wise to said moving belt, an opening in said work-holder for loosely holding the work to be sanded and a rotatable drum mounted above said work-holder and in peripheral contact with the work to rotate the latter.

2. In a device of the class described, the combination of a sliding spindle carrier, a sanding belt, an opening in said spindle carrier for loosely holding a spindle, a rotating drum above said spindle carrier and in peripheral contact with the work for rotating the latter, and means for adjusting said drum with relation to the sanding belt to vary the space between said sanding belt and said drum, substantially as shown and described.

3. In a sanding machine, the combination of a sanding belt, a bed supporting a section of said belt, a slide-way provided on said bed, a spindle carrier slidably mounted in said slide-way operable immediately above the sanding belt, and adapted to slide cross-wise of the direction of travel of said sanding belt, an opening in said spindle carrier for receiving and loosely holding the spindle with its longitudinal axis at or near the direction of travel of the sanding belt, means adjustably positioned above said spindle carrier for rotating the spindle and limiting the space and angle between said sanding belt and said means to limit the sanding action of the belt when the spindle carrier is moved transversely of said belt.

4. In a sanding machine, the combination of a sanding belt, a bed supporting a section of said belt, a spindle carrier slidably mounted on said bed transversely of and above the sanding belt, said spindle carrier being provided with an opening for receiving and loosely retaining the spindle with its longitudinal axis extending substantially in the direction of travel of the sanding belt, a rotating drum for rotating the spindle when the latter is brought into peripheral contact with said drum in the transverse movement of said slide across the belt, a pair of independently adjustable arms rotatably supporting the ends of said drum, and said rotating drum in its adjusted position limiting the sanding action of the belt when the spindle is moved transversely across said belt.

In testimony whereof, I have hereunto affixed my signature.

PHILLIP ROUNSEVELLE.