No. 871,323. PATENTED NOV. 19, 1907.

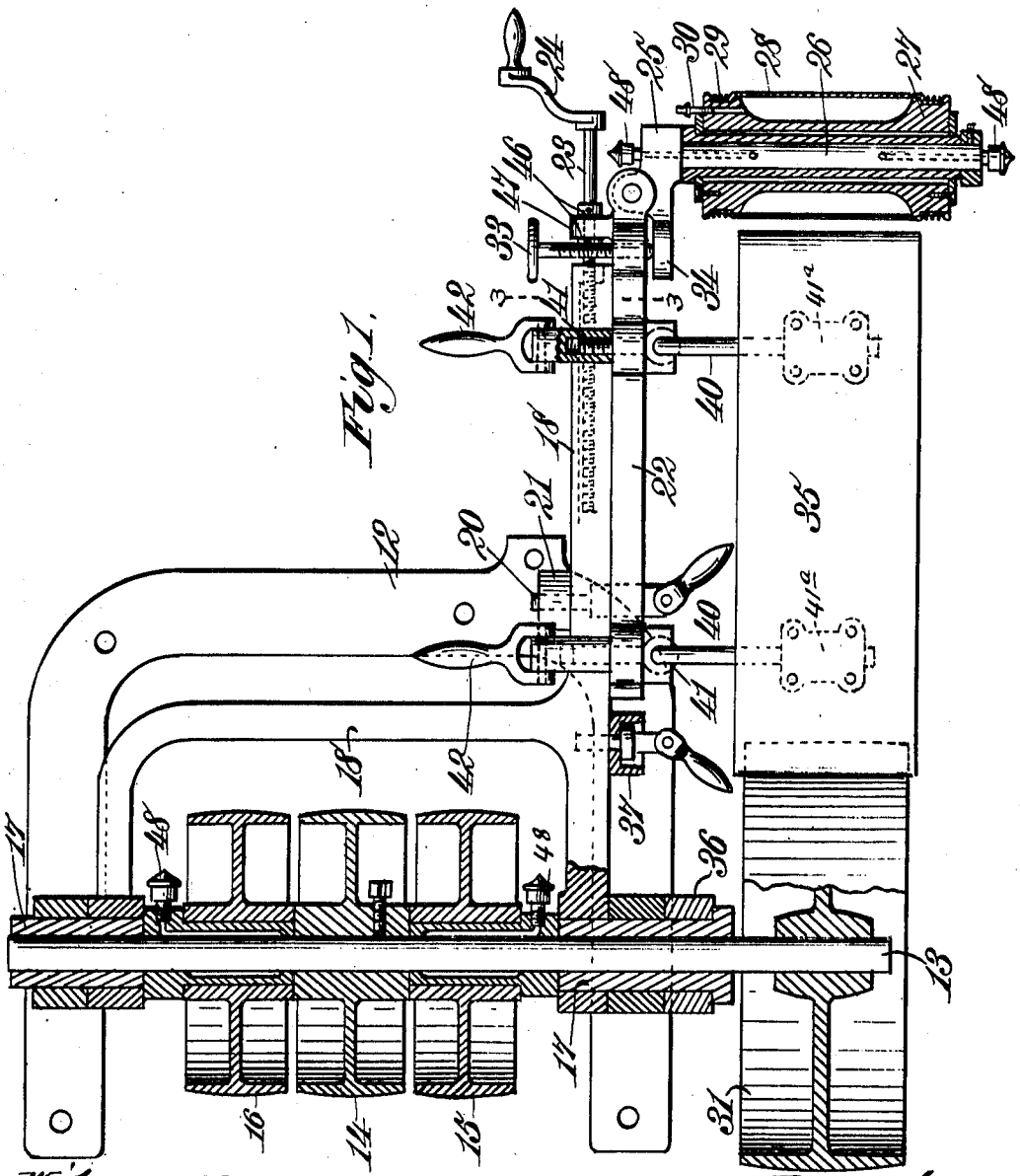
DE LASKI T. CLEMONS.

SANDING AND POLISHING MACHINE.

APPLICATION FILED AUG. 1, 1906.

2 SHEETS—SHEET 1.

Fig. 1.



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SANDING AND POLISHING MACHINE.

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2 SHEETS—SHEET 2.

Fig. 2.

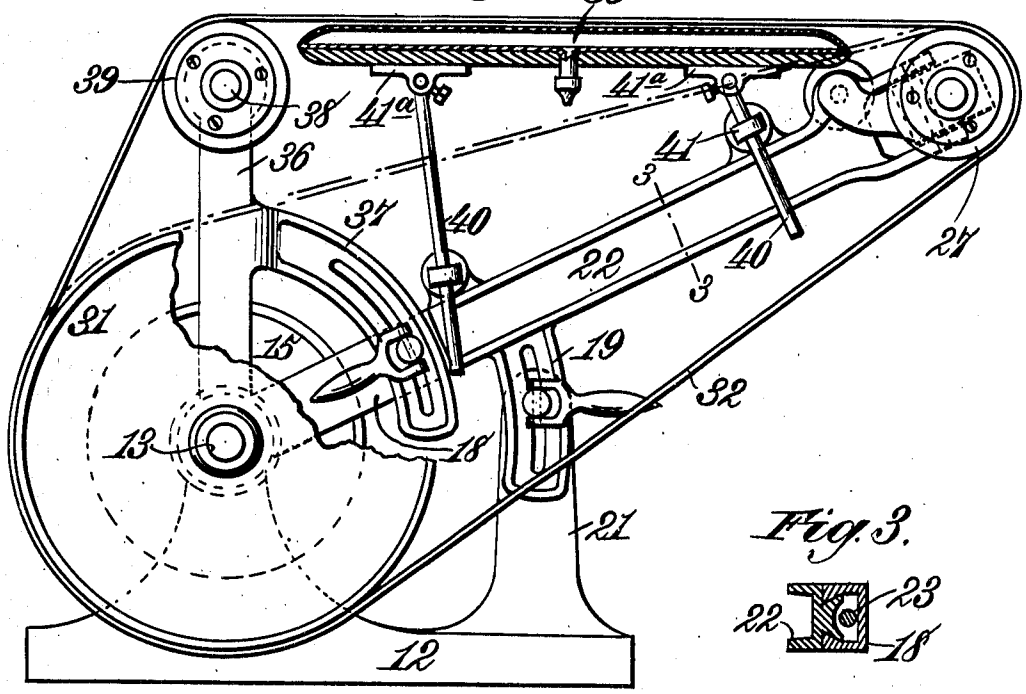


Fig. 3.

Fig. 5.



Fig. 6.

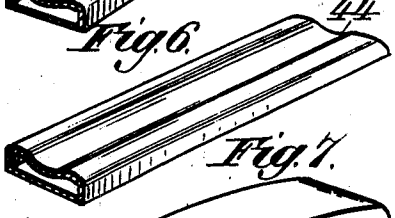


Fig. 7.

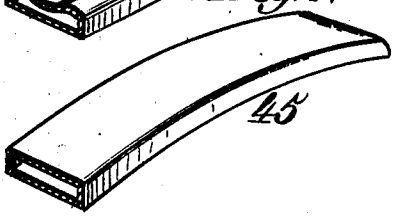
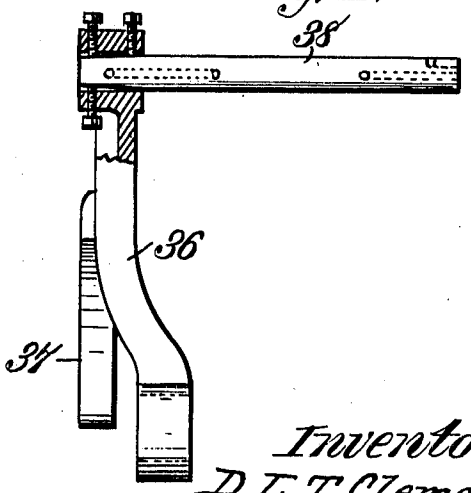


Fig. 4.



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UNITED STATES PATENT OFFICE.

DE LASKI T. CLEMONS, OF HORNELL, NEW YORK.

SANDING AND POLISHING MACHINE.

No. 871,323. Specification of Letters Patent. Patented Nov. 19, 1907.

Application filed August 1, 1906. Serial No. 328,694.

To all whom it may concern:

Be it known that I, DE LASKI T. CLEMONS, a citizen of the United States, residing at Hornell, in the county of Steuben and State of New York, have invented or discovered certain new and useful Improvements in Sanding and Polishing Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to sanding machines for smoothing or polishing articles of wood and the like, and the invention has for its object to provide a machine of this class which is better adapted for sanding and polishing articles of rounded and irregular forms than similar machines heretofore constructed.

To this end the improved machine comprises one or more pneumatic rollers over which a sanding belt runs, and also preferably comprises a pneumatic pad over which, for some classes of work, the sanding belt also runs, so that the said sanding belt may yield to accommodate irregularities in the surfaces of the work, all as will be hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a plan and horizontal sectional view of a sanding machine embodying the invention and Fig. 2 is a side view of the same with some parts in section. Fig. 3 is a detail section on line 3—3, Fig. 2, and Fig. 4 is a detail view of one of the roller-supporting brackets. Figs. 5, 6 and 7 are detail views of different forms of pneumatic pads.

Referring to the drawings, 12 denotes a suitable frame having bearings in which is journaled the driving shaft 13 provided with a fast pulley 14 and also preferably provided with two loose pulleys 15 and 16, one of said pulleys being intended for use with a straight belt and the other with a twisted belt, so that the machine may be run in either direction.

Pivotally mounted on sleeves 17, which serves as bearings for the driving shaft 13, is a frame 18, having an arm 19 suitably slotted for the passage of a securing bolt 20. Said arm 19 is attached to the standard 21, forming part of the frame 12, so that the frame 18 may be fixed in any desired position of adjustment. Adjustably mounted on the frame 18 is a slide 22 which is movable endwise of the said frame 18 by means of an adjusting screw 23 tapped in the said frame 18 and provided with a crank handle 24 by which it may be turned. To the outer end of the slide 22 is pivotally attached a bracket 25 having a spindle portion 26 on which is journaled a roller 27.

The roller 27 comprises a wooden or metal core with a central annularly grooved or concaved portion. Over the said core is tightly fitted a tube 28 of rubber or similar air-tight material. The ends of the said tube 28 are preferably attached to the core or body of the roller by glue or any suitable adhesive material and are then wound tightly with several convolutions of wire 29, so as to make an air-tight joint between the ends of the said rubber tube and the said core. After winding, the wire may be soldered or otherwise permanently attached in place. Through one end of the core 27 is inserted a tube 30 which may be provided with an ordinary pneumatic tire valve for the admission of air to the chamber of the roller between the core and the rubber covering 28, so that when air has been forced into the said chamber the roller 27 becomes a pneumatic roller.

The driving shaft 13 is provided with a pulley 31 over which and the pneumatic roller 27 runs the sanding belt or abrading belt 32 which is or may be of ordinary construction, and the said roller may be properly adjusted relative to said slide by means of a screw 33 tapped in the slide 22 and abutting against a lug or projection 34 with which the bracket 25 is provided. Also the said sanding belt may be properly tightened by turning the screw 23 so as to adjust the slide 22 lengthwise of the frame 18, said slide having a lug 47 through which the shaft of the screw loosely passes and which shaft is provided with collars 46 embracing said lug.

In the use of the machine for some kinds of work the articles being sanded or polished will be pressed towards the pneumatic roller 27, and against the sanding belt running over the said roller, and to this end the frame 18 will be suitably adjusted for bringing the said roller to any desired height. As the vertically adjustable frame 18 is pivoted on the bearings of the driving shaft as a center, said frame may be adjusted, to vary the working height of the pneumatic roller 27, without varying the tension of the sanding belt running over said roller and over the driving pulley 13 on said shaft. For other kinds of work it may be preferable to press the articles to be sanded or polished towards the

pneumatic pad 35, suitably supported on frame 18 and over which pneumatic pad the sanding belt 32 will be arranged to run when the said pad is in use, so that the articles being sanded or polished will be pressed against the sanding belt running over said pad. To this end the improved machine comprises a bracket 36 pivotally mounted on one of the sleeves 17 and provided with an arm 37 by which it may be adjustably connected with the frame 18, the said bracket 36 carrying a spindle 38 on which is mounted a roller 39, preferably constructed as a pneumatic roller, like roller 27, so that the sanding belt 32 may be run from the driving pulley 31 over the rollers 27 and 39, and in contact with the pneumatic pad 35. The pneumatic pad 35 may be of any suitable construction providing a rigid frame or core, and a bag of rubber or other suitable air-tight material will be stretched over or supported upon said frame or core and suitably inflated with air to provide a yielding cushion or support over which the sanding belt will run, so that irregular articles to be sanded or polished may be pressed against the said sanding belt running over said pad which will yield to permit the irregular surfaces to be suitably abraded.

The pneumatic pad 35 is supported by right-angular rods 40 secured by clamping eye-bolts 41 to the pivoted frame 18, said eye-bolts being preferably provided with wrenches, as 42, by which they may be tightened or loosened, as may be required. The horizontal parts of the rods 40 are attached to plates or brackets 41^a on the frame of the pad. By turning the eye-bolts in their sockets the pneumatic frame is capable of adjustment endwise, or the said frame may be adjusted vertically by moving the rods 40 through the said eye-bolts, as will be understood.

Pneumatic pads of different forms may be employed for different kinds of work. For example, instead of the flat pad shown in Figs. 1 and 2 a curved pad, as 43, with a hollowed or concaved upper face, or a flat pad as 44, with a concaved or hollowed upper face, or a plain curved pad, as 45, may be used, thus adapting the pads to the requirements of the work to be done.

In the operation of the machine, when the sanding belt is to run only over the pulley 31 and the pneumatic roller 27, as denoted by dotted lines in Fig. 2, the pneumatic pad will be so adjusted as to be out of the way of the belt, or said pad may be removed from the machine; and when said belt is to run over the roller 39 and above the pneumatic pad, as denoted by full lines in Fig. 2, the bracket 36 and the slide 22 will be so adjusted as to make said belt properly taut.

The machine preferably comprises suitable grease cups, as 48, from which the bearings of the pneumatic roller or rollers and the loose pulleys may be lubricated.

My invention is not to be understood as being limited to the particular constructions or forms of the driving mechanism or of the pneumatic pads and rollers herein shown and described, as any suitable constructions of these parts may be employed, and other changes in the details of the machine may be made, within the limits of mechanical skill, without departing from the invention.

Having thus described my invention I claim and desire to secure by Letters Patent:—

1. In a sanding machine, the combination with a sanding or abrading belt and means for driving the same, of one or more pneumatic rollers and a pneumatic pad over which said belt runs.

2. In a sanding machine, the combination with a main frame and a driving shaft journaled therein, of a pulley carried by said shaft, an adjustable frame, a pneumatic roller or pulley mounted thereon, means for securing said adjustable frame to said main frame in different positions of adjustment to vary the working position of said pneumatic roller or pulley, an adjustable bracket mounted on said main frame, a second pneumatic roller or pulley carried by said bracket, and means for securing said bracket to said main frame in different positions of adjustment.

3. In a sanding machine, the combination with a sanding or abrading belt and a driving pulley for the same, of a pneumatic roller over which said belt runs, an adjustable pivoted frame so as to form an extension thereof and a slide adjustably mounted on said frame and by which slide said roller is operatively supported.

4. In a sanding machine, the combination with a sanding or abrading belt and a driving pulley for the same, of a pneumatic roller over which said belt runs, an adjustable pivoted frame, a slide adjustably mounted on said frame, and a bracket pivotally and adjustably attached to said slide and having a bearing spindle for said roller.

5. In a sanding or abrading machine, the combination with a pivotally mounted adjustable frame, of a pneumatic roller supported by said frame, a pneumatic pad adjustably mounted on said frame, a second adjustably supported roller, a sanding belt running over said rollers and pad, and a driving pulley for said belt.

In testimony whereof I affix my signature, in presence of two witnesses.

DE LASKI T. CLEMONS.

Witnesses:
CHAS. GALLY,
J. W. NICHOLSON.