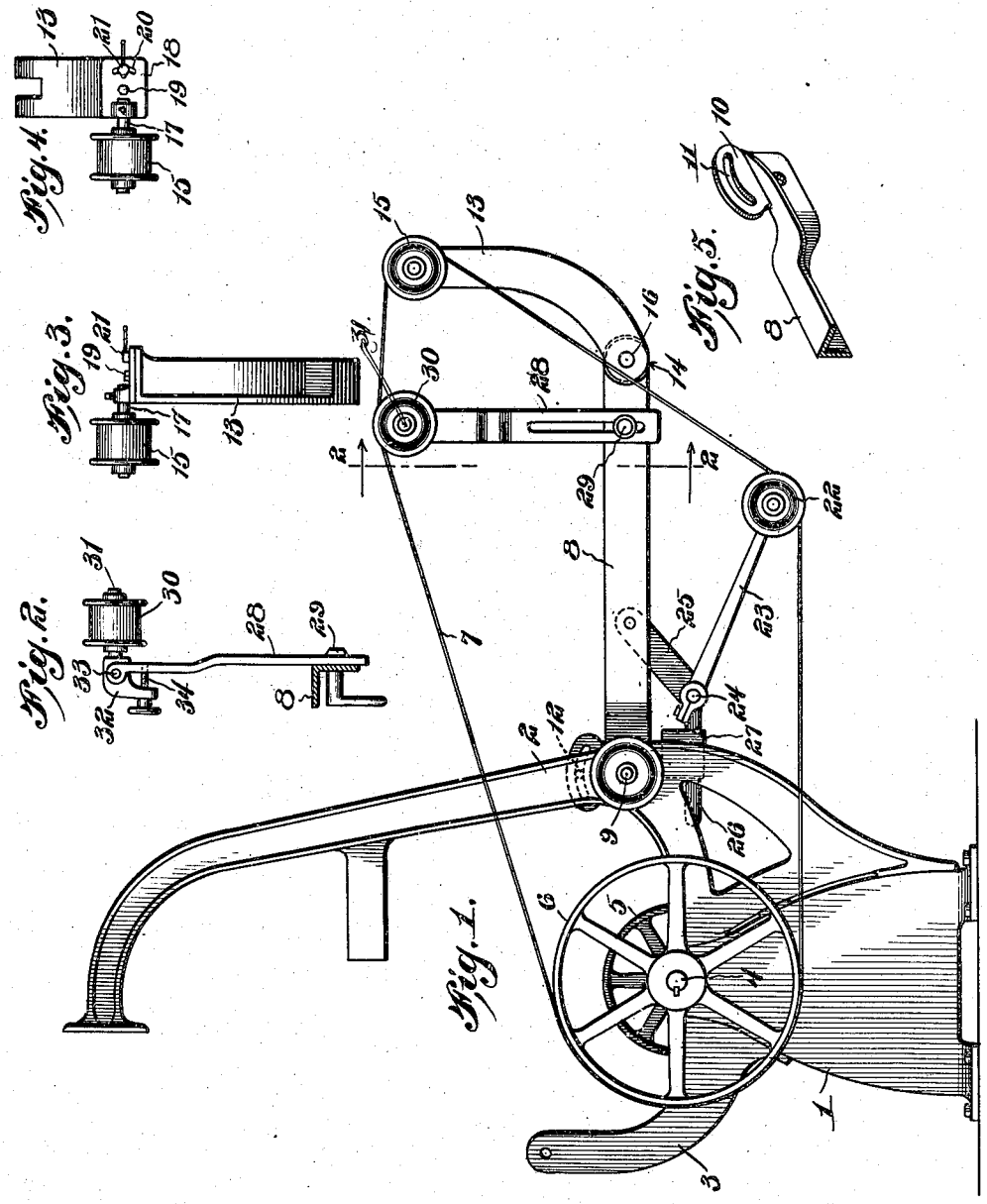
No. 894,851. PATENTED AUG. 4, 1908.

D. S. OAKLEY.

ABRASIVE FINISHING MACHINE.

APPLICATION FILED JUNE 1, 1907.



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ABRASIVE FINISHING-MACHINE.

No. 894,851. Specification of Letters Patent. Patented Aug. 4, 1908.

Application filed June 1, 1907. Serial No. 376,774.

To all whom it may concern:

Be it known that I, DAVID S. OAKLEY, a citizen of the United States, residing at Parkersburg, in the county of Wood and State of West Virginia, have invented new and useful Improvements in Abrasive Finishing-Machines, of which the following is a specification.

This invention relates to a sand papering machine of that type in which the abrasive element is in the form of an endless belt, and the invention contains features which are adapted for use in connection with any approved band-saw machine or the like as an attachment therefor.

The invention has for one of its objects to provide an abrasive machine for finishing woodwork and the like of different forms and shapes which is comparatively easy and inexpensive to manufacture, effective in operation, and of durable and substantial design.

A further object of the invention is the provision of a machine in which the abrasive belt is arranged in such a manner as to readily conform to the work.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawing, which illustrates one of the embodiments of the invention, Figure 1 is a side elevation of the machine. Fig. 2 is a transverse section on line 2—2, Fig. 1. Fig. 3 is a rear end view. Fig. 4 is a plan view of the rear portion of the machine. Fig. 5 is a detail perspective view of the forward end of the horizontal bracket.

Similar reference characters are employed to designate corresponding parts throughout the several views.

Referring to the drawing, 1 designates the frame of a band-saw or other machine, which has the usual upwardly-extending saw-supporting bracket 2 and a front bracket 3 for supporting the work table (not shown). On the frame 1 is a horizontal driving shaft 4 having fixed and loose pulleys, one of which is indicated at 5, whereby the shaft can be driven by a belt and also on the shaft 4 is a driving pulley 6 for an abrasive belt 7. Extending rearwardly from the bracket 2 is a horizontally extending arm 8 which is hingedly connected with the bracket 2 on the pivot 9 and which is provided with a segmental projection 10 at its front end that has an arcuate slot 11 and through this slot and screwing into the bracket 2 is a bolt 12 whereby the arm can be raised or lowered with respect to the horizontal. On the outer end of the arm 8 is an upwardly curved extension 13 connected by a hinge-joint 14, and on the free end of this member 13 is a guide pulley 15 over which the belt 7 passes. By means of the clamping bolt 16 at the hinge 14, the extension 13 can be hingedly secured in any desired position.

As shown in Figs. 3 and 4, the pulley 15 is mounted on a short shaft 17 fixed on a plate 18 that is capable of pivoting on the stud bolt 19, there being an arcuate slot 20 in the said plate through which passes a clamping screw 21 that has a threaded engagement in an opening on the top end of the member 13. Under the arm 8 is a belt-tightening pulley 22 mounted on a lever 23 fulcrumed at 24 on a fixed bracket 25 carried by the arm 8. On the arm 26 of the lever is a slidable weight 27 whereby the tension on the belt 7 produced by the pulley 22 can be regulated to a nicety.

Mounted on the arm 8 is a belt-supporting device that is arranged in suitable proximity to the pulley 15 and between this device and pulley the work is held by the operator when finishing the same by the abrasive belt. In the present instance, this device comprises a slotted standard 28 secured to one side of the arm 8 by a bolt 29, and on the upper end of the standard is a pulley 30 for supporting the belt in the position desired, according to the character of the work. The pulley is mounted to rotate on a shaft or spindle 31 that is carried on a block 32 attached to the upper end of the standard by a pintle 33, whereby the pulley can be adjusted in any desired position. On the block 33 is an adjusting screw 34 that screws into the standard, as shown in Fig. 2.

The operation of the machine may be briefly described as follows. After the various parts have been adjusted to suit the character of work to be done, the abrasive belt is started and the operator, while positioned at the rear of the machine, holds the article to be finished on the belt at a point between the pulleys 15 and 30 and the belt is free to assume any form, according to the shape of the article being finished, and by properly manipulating the article, the belt can be caused to take out the imperfections

and roughnesses at practically all points irrespective of the contour of the object. As the belt is flexed under the pressure of the object or article pressed against the belt, the pulley 22 will readily give and is at all times tending to hold the belt taut.

From the foregoing description, taken in connection with the accompanying drawing, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the apparatus which I now consider to be the best embodiment thereof, I desire to have it understood that the apparatus shown is merely illustrative and that such changes may be made when desired, as are within the scope of the claims.

Having thus described the invention, what I claim is:—

1. In a machine of the class described, the combination of a frame, a driving pulley thereon, a pulley-supporting arm on the frame, an endless element passing around the pulleys, a member longitudinally and tiltably adjustable on the arm, a support for engaging the element, a tiltable block on which the support is mounted, a pivot for the block disposed at right angles to the axis of the said pulley, and an adjusting screw carried by the block and engaging the said member for tilting the support on the pivot of the block.

2. In a machine of the class described, the combination of a frame, a driving pulley mounted thereon, an arm mounted on and projecting from the frame, a second pulley, an endless element passing around the pulley, a spindle for the second pulley, a plate on which one end of the spindle is mounted, a pivot for the plate disposed in line with the spindle, and means for clamping the plate in adjusted position for holding the spindle in parallelism with or at an angle to the axis of the driving pulley.

3. In a machine of the class described, the combination of a frame, an arm having one end pivoted to the frame and having its opposite end unsupported, a hinged extremity on the outer end of the arm, a pulley on the said extremity, a driving pulley on the frame, an endless element passing around the pulleys, an adjustable member on the arm, an adjustable support on the member for engaging the element, a tightening device for the element consisting of a weighted lever and a pulley thereon, means for mounting the lever directly on the arm, and a fastening for holding the arm in fixed position and coöperating with said pivot for supporting the weight of the arm and attached parts on the frame.

4. In a machine of the class described, the combination of a frame, a driving shaft, an outwardly extending arm adjustably connected with the frame, a pivot parallel with the shaft and on which the arm tilts, an upwardly extending member hingedly connected with the extremity of the arm, a tiltable guide pulley on the member, a driving pulley mounted on the shaft, an abrasive belt passing over the pulleys, a vertically extending adjustable member on the arm, and adjustable means on the last-mentioned member for engaging under the belt.

5. In a machine of the class described, the combination of a frame, a driving pulley, an arm on the frame mounted to swing on an axis parallel with that of the pulley, a pulley on the arm arranged parallel with the driving shaft with reference to their axes, means for adjusting the second pulley on a line at right angles to its axis, an abrasive belt passing over the pulleys, and an adjustable support on the arm including a pulley engaging under the belt at a point adjacent the second pulley and tiltable on an axis disposed at right angles to that of the pulley.

6. In a machine of the class described, the combination of a frame, a driving shaft thereon, a pulley on the shaft, an arm adjustably connected with the frame, an adjustable member on the extremity of the arm and movable with the latter, a guide pulley on the upper end of the member and adjustably connected therewith, a slotted standard adjustably connected with the arm and movable therewith, an abrasive belt passing over the pulley, a device on the standard engaging the belt at a point adjacent the guide pulley, means for hingedly connecting the device with the standard, a swinging arm attached to the first-mentioned arm and movable therewith, a pulley thereon engaging the belt for yieldingly tightening the same, and a weight arranged to partially counterbalance the tightening pulley.

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

DAVID S. OAKLEY.

Witnesses:

NORTON L. UPSON,

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