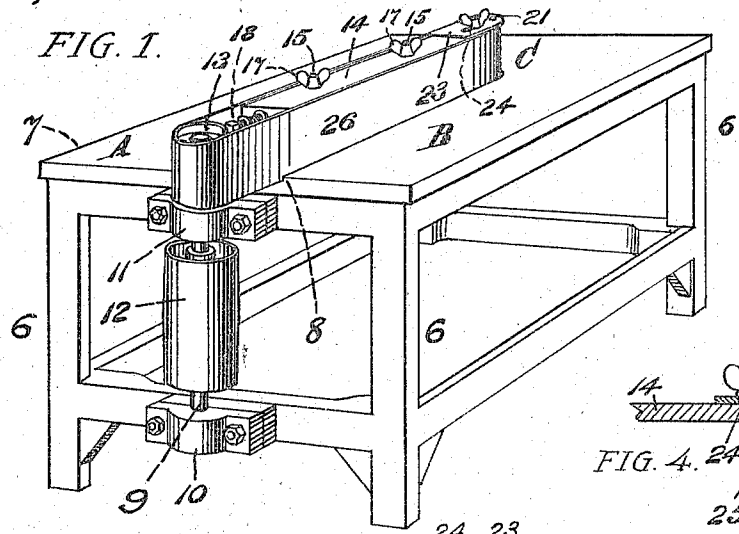
H. M. DOCTER, Sr.

BELT SANDING MACHINE.

APPLICATION FILED AUG. 13, 1917.

1,286,560. Patented Dec. 3, 1918.

FIG. 1.



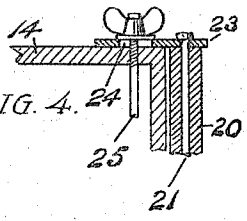


FIG. 4.

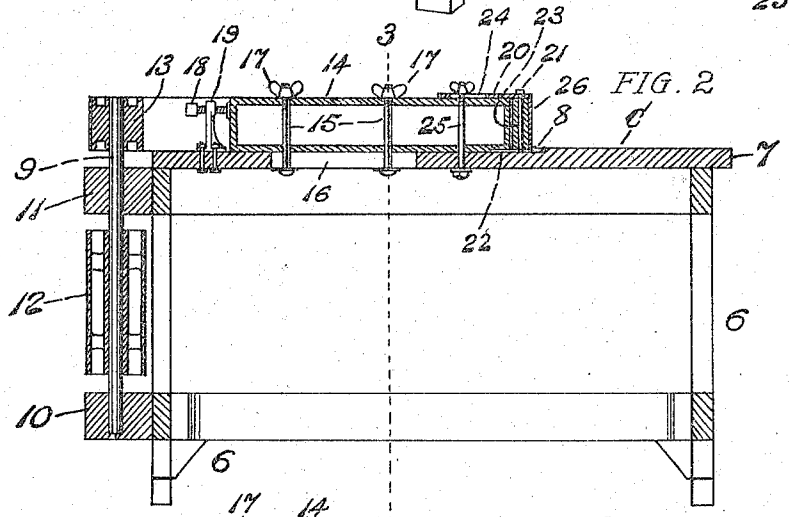


FIG. 2

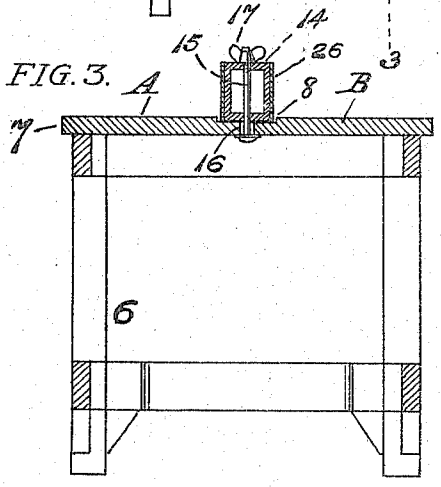


FIG. 3.

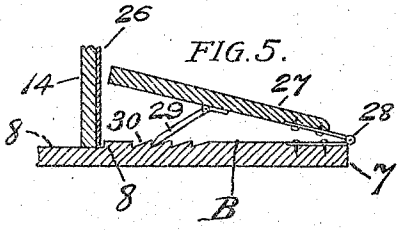


FIG. 5.

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UNITED STATES PATENT OFFICE.

HENRY M. DOCTER, SR., OF DAYTON, KENTUCKY.

BELT SANDING-MACHINE.

1,286,560. Specification of Letters Patent. Patented Dec. 3, 1918.

Application filed August 13, 1917. Serial No. 186,030.

To all whom it may concern:

Be it known that I, HENRY M. DOCTER, Sr., a citizen of the United States of America, and a resident of Dayton, in the county of Campbell and State of Kentucky, have invented a certain new and useful Improvement in Belt Sanding-Machines, of which the following is a specification.

This invention relates to sanding-machines in which a continuous belt having an abrading face is used to smooth or otherwise similarly dress or polish the work on a table adjacent thereto, and the object of the invention is to provide a longitudinally-adjustable backing bar or head for the running engagement of the inner face of the sanding-belt whose lower edge lies in a countersunk portion made along the center of the table face, between two wide work-supporting members thereof, and said belt being also mounted to run over a driving-pulley at one end and over an idler or roller at its other end to reduce wearing-friction at the latter end and at the same time provide for both flat or ordinary work and curved or scroll work in the use of the machine, and, also, for running the belt against what is known as "waving" of the work.

The details of structure will be fully hereinafter described and then particularly pointed out in the claims.

In the accompanying sheet of drawings,—

Figure 1 is a perspective view of the machine containing my invention in its preferred form; Fig. 2, a longitudinal section taken along the center of the machine; Fig. 3, a transverse section, taken on the line 3, 3, of Fig. 2; Fig. 4, a detail, fragmentary section of the idler end of the sanding-belt; and Fig. 5, a detail fragmentary section of the belt and table showing an auxiliary, adjustable supporting device for use in producing bevel or angle work against the flat running faces of the belt.

In these views, 6 indicates a rectangular open frame having a table or flat-top surface 7, the latter, in turn, having a countersunk, longitudinal center 8 that terminates somewhat from the rear end thereof.

9 indicates a perpendicular shaft journaled in bearings or boxes 10 and 11 at the fore or near end of frame 6, and carrying between said boxes a tight pulley 12 that is adapted to be driven by means of any suitable power-belt.

13 indicates a tight pulley at the upper end of the shaft 9 that extends beyond the plane of the table 7; and 14 is a hollow bar or elongated head whose bottom flatly rests in the countersunk part 8 of the table but not the full length of such part 8.

Vertical bolts 15, 15, pass downwardly through the hollow head 14 and engage a longitudinal slot 16 in the countersunk part 8 of the table to provide for the longitudinal adjustment of the said head 14, thumb-screws 17 being used on the upper ends of said bolts for convenient fastening thereof. A horizontal set-screw 18 is mounted on a vertical support 19 adjacent the near end of the head 14, whereby the latter may be readily advanced to and held in adjusted position in the countersunk part 8.

At the far end of the head 14 I provide a vertical idler or roller 23, the lower end of whose shaft or pin 21 turns in a plate 22 on the bottom of the head 14 and the upper end of whose said shaft 21 bears in a plate 20 that, in turn, is adapted to adjustably hold the shaft 21 and the idler slightly out of perpendicular when desired, more especially for the purpose hereinafter described.

26 is the sanding-belt mounted to run over the pulley 13 and idler 23, with the hollow head 14 intervening its running lengths. The lower edge of this sanding-belt 26 lies below the plane of the table in the countersunk portion 8 thereof, and the belt proper is made of linen or canvas that is strong and has a limited or low tendency to stretch, especially when it is made to carry on its outer face a strip of sand-faced paper against which the work is pressed into abrading and smoothing or polishing contact.

In the operation of using the machine, the work or object to be dressed is placed on the table 7 that is divided into two broad flat surfaces A and B at either side of the countersunk center 8 and a flat end C that extends beyond the idler end of the sand-faced belt. The parts A and B of the table are intended to receive flat work that is smoothed or dressed against the running lengths of the sanded belt, while the part C is to receive rounded or scroll work to be smoothed or dressed against the said round or convex idler end of the sanded belt, thus adapting the machine to be used by one, two, or three, or even more operatives at a time,

the hollow head 14 forming a backing or filler-block against which the belt runs while the said work is pressed into abrading contact with its outer sanded surface along its running lengths, and the idler 20 forming a backing for the scroll or curved work at that end of the belt. It is preferred that the said idler have a rubber or other like cushioned face to provide a like backing for the belt in the said scroll work placed against its outer sanded face, an idler wholly of metal being too hard and not pliable enough for that class of work wherein curves of all degrees are to be contended with and require compensating abrading surfaces to accomplish the desired best results.

The slot 16 in the countersunk portion 8 of the table top enables the bolts to be shifted for the desired forward or backward adjustment of the backing-head 14 in acquiring the proper tightening of the sanded belt 26 for successful operation, the thumbscrews 17 facilitating such adjustment at all times and especially when it is desired to remove the sanded belt for any purpose, such as replacing it entirely, or for reversing it, in which latter event the lower edge of first use becomes the upper edge of the next use and the abrading surface is also reversed so that the use of such abrading surface is utilized in both directions, the second use being after the sharp edges of the particles forming the abrading surface have become dull on the first use of the belt and the direction of running movement of the latter is thus not necessary to reverse.

The fastening-bolt 25 and slot 24 in the movable pivot-plate 23 enable the idler 20 to be tilted slightly away from the ordinary perpendicular rearwardly so that the sanded belt can be "trued" at all times and thereby fortified against running upwardly therefrom, nor, on the other hand, unduly running downwardly to cause its lower edge to wear against the table, especially when the work is in pressing and abrading contact with its face. Imperfectly connecting the opposite ends of said sanded belt is thus also provided for.

For bevel work or angle sanding I provide an auxiliary supporting-table 27 that is hinged at 28 at its outer edge and held at varied inclinations by means of hinged props or pawls 29 that engage teeth 30 in the main-table face at opposite ends of said auxiliary table. This auxiliary table is a convenient device adapted for use with my invention, but not claimed as a part of the invention herein.

The machine herein is simple, cheap and easily made, assembled and repaired, and every part thereof easily accessible, and it is obvious that it is easily understood and handled so that any one, not necessarily an expert, can run it.

I claim:—

1. In a belt sanding-machine, the combination of a table having a longitudinally-countersunk central portion arranged between two wide work-supporting plane-surfaces, a longitudinal slot in said countersunk portion of the table, a vertical driving-shaft journaled at one end of said table and having a pulley at its upper end, a longitudinal filler block or head adjustably mounted in and partially let into said slotted countersunk portion of the table and having at one end thereof a vertical adjustably-mounted idler or roller, and a sand-faced belt operatively-engaging said pulley and adjustably-mounted idler or roller and with said block or head intervening its opposite longitudinal running-portions for presenting a backing when the objects to be smoothed or otherwise dressed are brought into frictional engagement with said sanded or abrading face of the belt for flat work and said idler end of the belt presenting a convex sanding-surface for scroll work or the like in the use of the machine.

2. In a belt sanding-machine, the combination of a table having a longitudinal central portion slightly or partially countersunk between two wide work-supporting plane-surfaces, a longitudinal slot in said countersunk portion of the table, a vertical driving-shaft journaled at one end of the table and having a pulley surmounting its upper end, a longitudinal filler-block or backing-head slightly countersunk in said countersink of the table, means for adjustably-securing said backing-head in place, means at one end of the said backing-head for adjusting it in the countersunk portion of the table, a vertical idler or roller at the opposite end of said backing-head, means comprising a slotted plate and vertical bolt for supporting and angularly adjusting the vertical plane of the said idler, a sand-faced belt operatively-engaging said pulley and idler and having a presser-backing on said filler-block for flat and scroll work respectively.

HENRY M. DOCTER, SR.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."