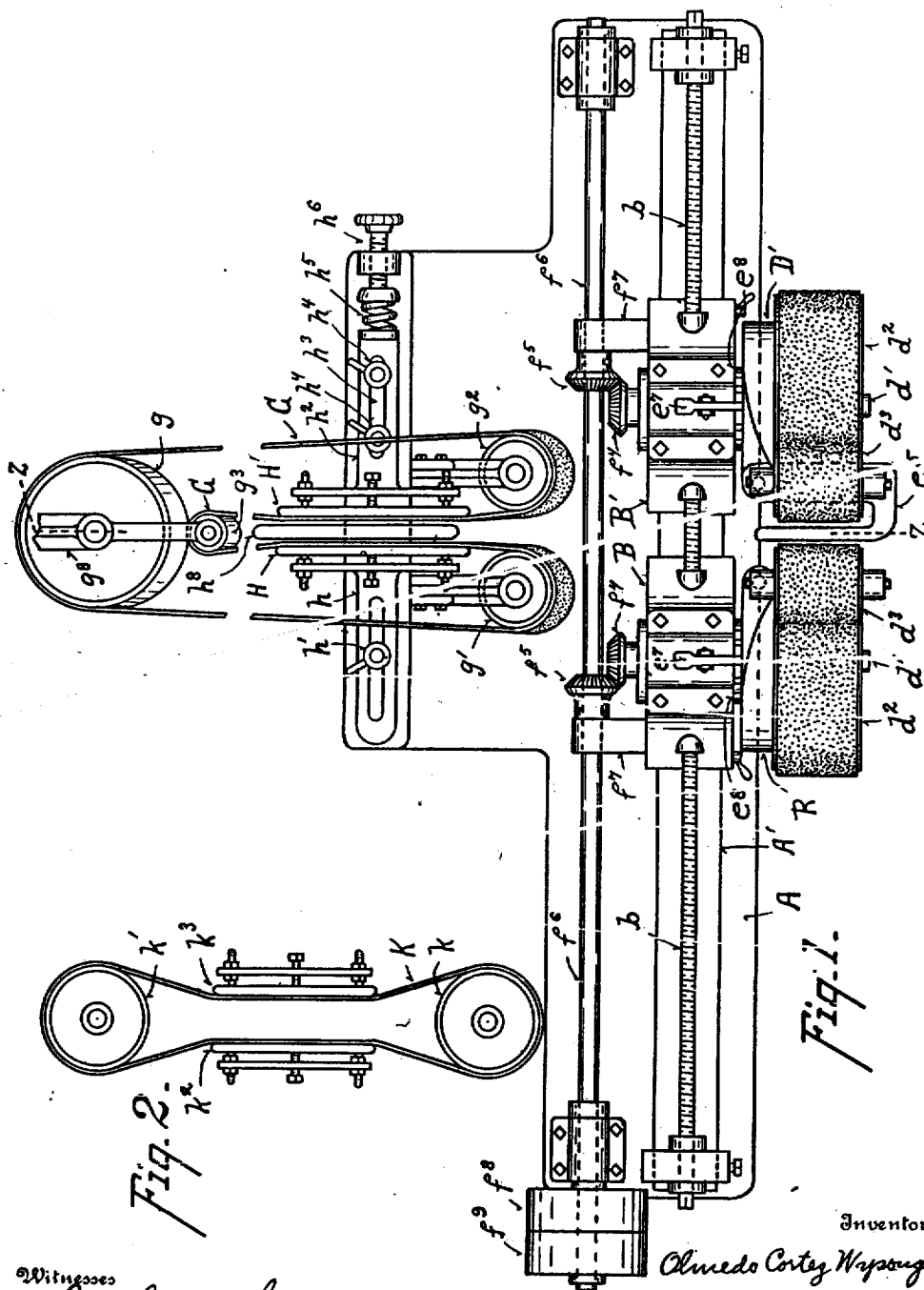


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APPLICATION FILED JULY 12, 1909.

Patented June 27, 1911.

3 SHEETS-SHEET 1.



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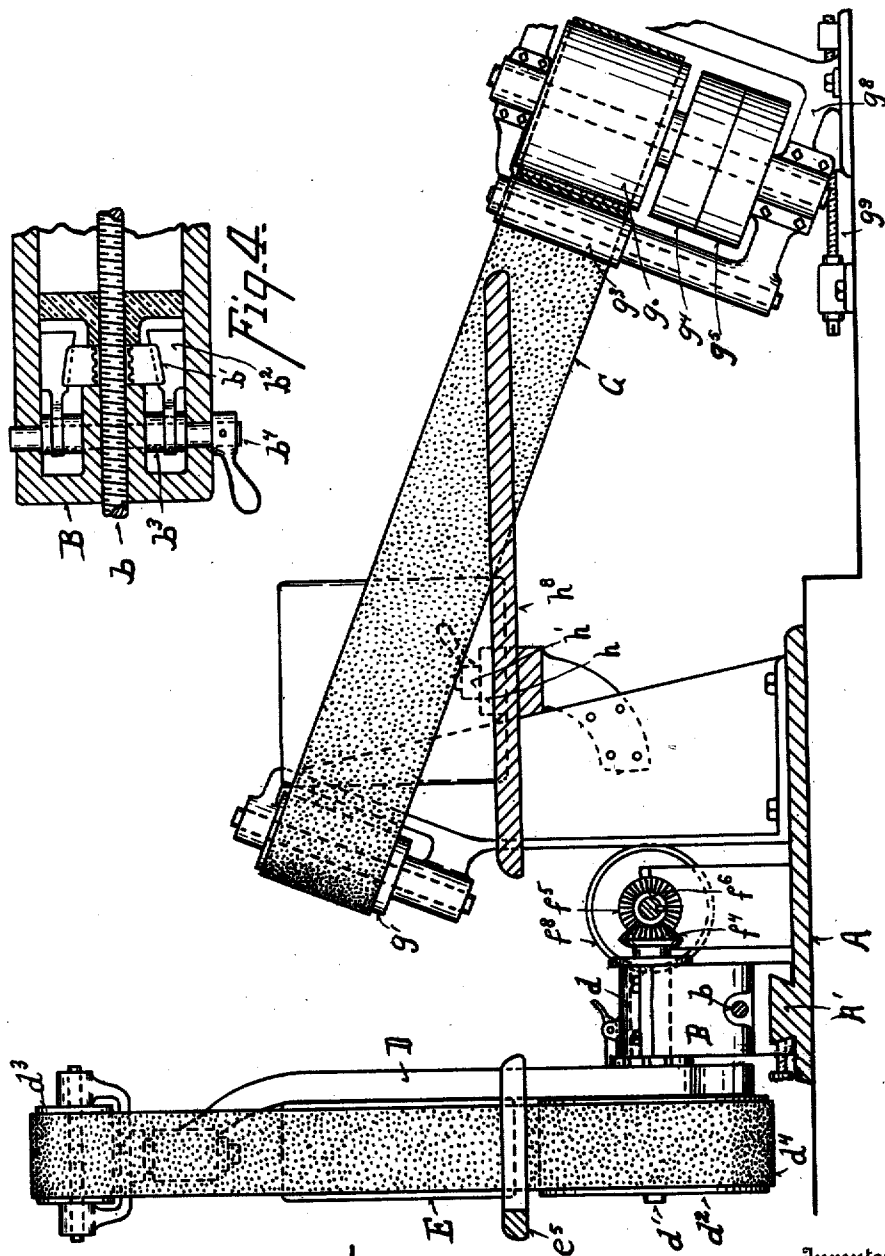


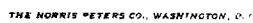
Fig. 3.

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UNITED STATES PATENT OFFICE.

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SANDPAPERING-MACHINE.

996,443.

Specification of Letters Patent. Patented June 27, 1911.

Application filed July 12, 1909. Serial No. 507,197.

To all whom it may concern:

Be it known that I, OLMEDO CORTEZ WYSONG, a citizen of the United States, residing at Greensboro, in the county of Guilford and State of North Carolina, have invented certain new and useful Improvements in Sandpapering-Machines, of which the following is a specification.

My invention relates to improvements in abrasive apparatus primarily for polishing straight work, and secondarily in provision for use of part of the mechanism for polishing irregular curved or straight work.

One of its objects is to provide mechanism employing sand or abrasive belts to expeditiously polish large as well as small pieces of straight work, including the class of straight work heretofore treated on sand drums, such as doors, boards, window and door frames.

Another object is to provide mechanism whereby the abrasive belts successively act upon the work first at substantially right angles to the grain of the work, and then substantially in line with the grain of the work.

Another object is to provide a single belt adapted to simultaneously act upon opposite sides of the work as it is fed forward, and substantially in line with the grain of the work.

Another object is to provide improved means for guiding and holding the belts in contact with the work, and provision for feeding the work continuously forward between the active sections of belt.

Another object is to make provision whereby the separate belts may be independently used when desired to polish irregular, curved or small pieces of straight work.

It further consists in certain details of form, combination and arrangement, all of which will be more fully set forth in the description of the accompanying drawings in which:

Figure 1 is a top plan view of my improved mechanism. Fig. 2 represents in side elevation a modification of the forward belts. Fig. 3 is a section on line *z z* of Fig. 1. Fig. 4 is a detail sectional view on line *v v* of Fig. 5. Fig. 5 is a front elevation of the mechanism of Figs. 1 and 3. Fig. 6 is a top plan view of a modification of the rear belt. Fig. 7 is a central vertical section illustrating a modification adapted to treat one side of the work at a time.

In the accompanying drawings A represents the base or frame on which the operative parts are mounted.

A' represents a gib or way on which are mounted the standards B B', which are adjustable along said way by means of a screw *b*, to which the standards may be connected at will by means of a split nut or clutch *b'* operated to open and close upon the screw by means of wedges *b²* actuated by eccentrics *b³* on the shaft *b⁴*. Thus the standards B B' may be fed to or from each other, or jointly to any position along the gib A'. Swinging frames D D' are pivotally supported upon the standards B B' by means of hollow sleeves *d*, which serve as journal box for the shafts *d'* of the belt driving pulleys *d²*. The frames D D' also carry adjustable idler pulleys *d³*, which serve to tension the abrasive belts *d⁴* *d⁵* and to make said belts track as desired over their pulleys, for which purpose said idler pulleys are mounted in yokes *d¹²* the stems *d⁶* of which are adjustable both endwise, and about their axes in sleeves *d⁷*, which sleeves are splined in sockets in the frames D D' and provided with rack teeth engaged by pinions *d⁸* by means of which said sleeves are quickly adjustable endwise. Set bolts *d⁹* *d¹⁰* serve to lock the sleeves *d⁷* and stems *d⁶* to their adjusted positions.

E represents a support for the rear face of the working portion of the abrasive belt *d⁴*. The support E is preferably provided with stud bolts *e* at its four corners by means of which the support can be adjusted relative to its supporting plate *e'*, the bolt *e²* serving to hold the support away from plate *e'* near its center, thus permitting the support E to be adjusted by the bolts *e* and nuts thereon into any position required to aline the belt *d⁴*. The plate *e'* is detachably supported upon a stud *e³* carried by the frame D.

e⁵ represents a table to support the work, which is detachably supported upon a stud *e⁶* carried by the frame D. The frame D is adapted to swing upon its pivotal support *d* to any desired angle of adjustment, and to be locked in such adjusted position by means of a latch *e⁷* entering notches in the flange *e⁸* of frame D. The frame D' is angularly adjustable in the same manner as the frame D, and has a work table *e⁵*. Its abrasive belt support E' is supported upon a plate *e⁹* and adjustable relative thereto in the same manner as the support E relative to plate *e'*.

The plate e^9 is supported relative to frame D' by means of parallel links F F', which permits the plate e^9 to be adjusted to and from the plate e' while preserving the alignment of its support E'. This adjustment is effected by means of a foot-lever f pivoted at f' to frame D' and provided with a crank arm f^2 and a link f^3 to connect the crank arm with the plate e^9 , so that pressure on the foot lever will advance the support E' toward the support E. Thus the two belts d^4 , d^5 are adapted to be alined and employed conjointly to surface opposite sides of a single piece of work, as indicated in Figs. 1, 3, and 5, and also when adjusted a sufficient distance apart, or to different angles, to be used independently by different operators.

The belt pulleys d^2 driving the respective belts d^4 , d^5 receive motion through separate pairs of cone gears f^4 , f^5 the gears f^5 being splined to the driving shaft f^6 , and held in mesh with the gears f^4 by means of brackets f^7 projecting from the standards B B'. The shaft f^6 is adapted to receive motion by means of a belt through tight and loose pulleys f^8 , f^9 .

In order to provide for the rapid and efficient surfacing of large pieces of flat or straight work I preferably provide an abrasive belt G arranged in line with and in rear of the belts d^4 , d^5 , so that while the belts d^4 , d^5 are adapted to work across the grain of the work, and to effect a rough surfacing of opposite sides thereof, the belt G will travel substantially in line with the grain of the work, or in a slightly diagonal line over the face of the work, to effect a finer and smoother finish of the work, which could not be effected by the use of either the belts d^4 , d^5 , or the belt G, alone.

The belt G is preferably supported upon a driving pulley g , and a series of idler pulleys g' , g^2 , g^3 . The pulley g^3 is provided with a cushioned face, and the abrasive face of the belt runs thereon. Motion is imparted to the driving pulley g through an independent belt over the tight and loose pulleys g^4 , g^5 . The working sections of the belt G are supported in the rear by means of adjustable supports H H', the support H being carried upon a bracket h , which is adapted to be adjusted to the desired position and clamped by a clamping nut h' . The support H' is carried by a bracket h^2 having a slotted opening h^3 , through which pass two stud bolts h^4 to hold bracket h^2 in place and allow it a limited movement endwise. A spring h^5 presses against the end of bracket h^2 , and its tension is adapted to be regulated by means of a screw rod h^6 , to provide an automatically yielding tension of the support H' against the rear face of the belt G, to press the two working sections of the belt against the opposite faces of the

work. Supports H, H', are adjustable for alinement as described for support E. The tension of belt G is attained by shifting the frame g^8 in which the pulleys g , g^3 are journaled by means of the screw g^9 . The work is supported between the supports H H' by means of a table h^8 , and the frame g^8 is arranged low enough so that the work will pass from table h^8 over the top of said frame.

Where it is designed to employ my improved mechanism exclusively in surfacing large pieces of straight work, a single abrasive belt K may be employed in place of the separate belts d^4 , d^5 , as indicated in Fig. 2, said belt K being supported upon a driving pulley k and an adjustable idler pulley k' with its abrasive face toward said pulleys, and the working sections of the belt supported by supports k^2 , k^3 , one of which is adjustable either as described for the support H' or the support E'.

As a modification to be used in place of the belt G, I have illustrated in Fig. 6 two independent horizontal or substantially horizontal belts L L', the working sections of which are supported by supports N N' mounted and operated as described for the supports H H', said belts L L' being supported upon driving pulleys m , m' and adjustable idler pulleys n , n' . If desired the support E' may be mounted and tensioned as described for support H'.

As illustrated in Fig. 7, abrasive belts P P' having adjustable supports R R', preferably yieldingly tensioned, and corresponding to belts d^5 and G of Fig. 1 are arranged to act successively upon one side only of straight work, the opposite side of the work being supported in contact with the active sections of said belts by means of table or support p , relative to which said belts and their supporting frames p' , p^2 are adjustable.

In practice the belt sections traveling crosswise of the grain serve to rapidly abrade the surface, and to remove all inequalities, and produce a uniformly plane, but not smoothly polished surface, while the belt sections traveling with or substantially with the grain of the work serve to highly polish such uniform surface, and to remove any marks caused by the previous belt sections traveling across the grain.

The mechanism herein illustrated and described is capable of considerable modification without departing from the principle of my invention.

Having described my invention, what I claim is;

1. In a mechanism of the character described, a pair of abrasive belt sections adapted to contact with the opposite faces of the work and to travel at substantially right angles to the travel of the work, sup-

ports for the rear faces of said belt sections opposite the work, a pair of abrasive belt sections located in line with and in rear of said first named belt sections and adapted to travel substantially in line with the travel of the work, and supports for the rear faces of said last named belt sections opposite the work, and means to support the work.

2. In a mechanism of the character described, a support for the work, an abrasive belt adapted to contact with one face of the work, and to travel at substantially right angles to the travel of the work, a support for the rear face of said belt opposite the work, an abrasive belt located in rear of said first named belt and adapted to contact with the work and to travel substantially in line with the travel of the work, and a support for the rear face of said last named belt opposite the work.

3. In a mechanism of the character indicated, a substantially horizontal work support, a pair of vertically traveling abrasive belt sections located at opposite sides of said work support, supports for the rear faces of said belt sections, a pair of substantially horizontally traveling abrasive belt sections located in rear of said first named belt sections and at opposite sides of said work support, and supports for the rear faces of said last named belt sections.

4. In a mechanism of the character described, a substantially horizontal work support along which the work is adapted to be fed, an abrasive belt having an active section adjustable to and from the work support, said belt traveling at substantially right angles to the feed of the work upon said work support, a support for the rear face of said active belt section, an abrasive belt located in rear of said first named belt having an active section adjustable to and from the work support and adapted to travel substantially in line with the feed of the work, and a support for the rear face of the active section of said last named belt.

5. In a mechanism of the character indicated, a substantially horizontal work support, a pair of active abrasive belt sections each traveling in a substantially vertical direction and adjustable to and from each other on opposite sides of said work support, supports for the rear faces of said active sections means to hold said active belt sections yieldingly in contact with opposite sides of the work, a pair of active abrasive belt sections located on opposite sides of said work support, in rear of said first named belt sections, each adapted to travel in a substantially horizontal direction, supports for the rear faces of said last named belt sections,

and means to hold said last named belt sections yieldingly in contact with opposite sides of the work.

6. In a mechanism of the character described, a substantially horizontal work table, a pair of abrasive belts adapted to travel in a substantially vertical direction, located upon opposite sides of said table and adjustable to and from each other, supports for the rear faces of the active sections of said belts, and means adapted to yieldingly hold said active belt sections in contact with opposite sides of the work, a pair of abrasive belts located in rear of said first named belts upon opposite sides of said work table and adapted to travel in a substantially horizontal direction, supports for the rear faces of the active sections of said last named belts, and means adapted to hold said active belt sections yieldingly in contact with opposite faces of the work.

7. In a mechanism of the character indicated, a base provided with ways, a pair of standards adjustable to and from each other upon the ways of said base, pivotally supported frames mounted upon said standards and adjustable to various angles relative thereto, belt driving pulleys carried by shafts journaled within the pivotal supports of said frames, adjustable idler pulleys carried by said frames and independent abrasive belts supported upon the pulleys of said respective frames, said belts being adapted to be used either conjointly upon a single piece of work or separately upon different pieces of work.

8. In a mechanism of the character indicated, a base provided with ways, a driving shaft mounted in bearings carried by said base, a pair of standards adjustable to and from each other upon the ways of said base, and provided with bearings supporting said driving shaft, adjustable frames pivotally mounted upon said standards, belt driving pulleys carried by shafts journaled within the pivotal supports of said frames, gears carried by said pulley shafts in mesh with and receiving motion from gears splined to said driving shaft, adjustable idler pulleys carried by said frames, and independent abrasive belts supported upon the pulleys of said respective frames, said belts being adapted to be used either conjointly upon a single piece of work or separately upon different pieces of work.

In testimony whereof I have affixed my signature in presence of two witnesses.

OLMEDO CORTEZ WYSONG.

Witnesses:

J. R. BROWN,
C. W. MILES.