C. S. DERNBACH.

MACHINE FOR DRESSING AND CLEANING WOOD SURFACES.

APPLICATION FILED FEB. 10, 1921.

1,410,554. Patented Mar. 28, 1922.

3 SHEETS—SHEET 1.

Fig. 1.

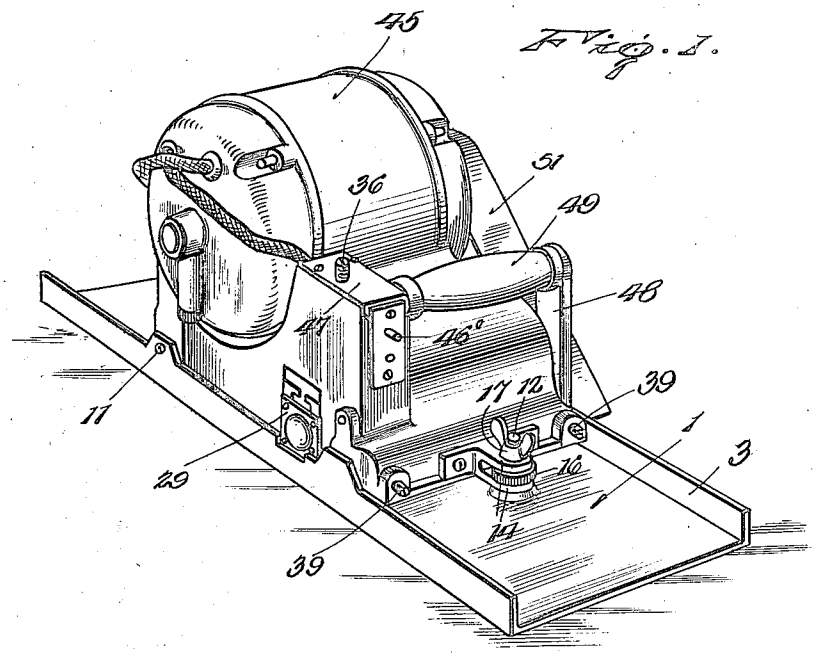
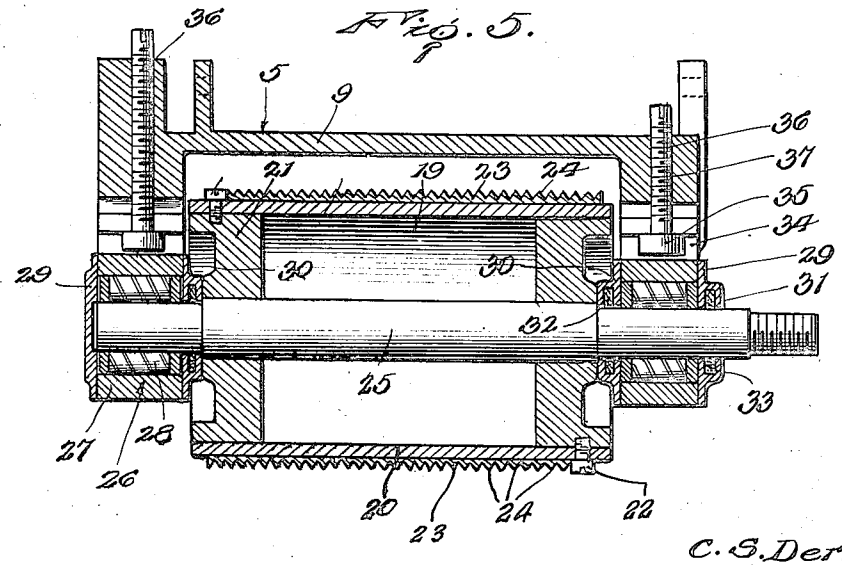


Fig. 5.



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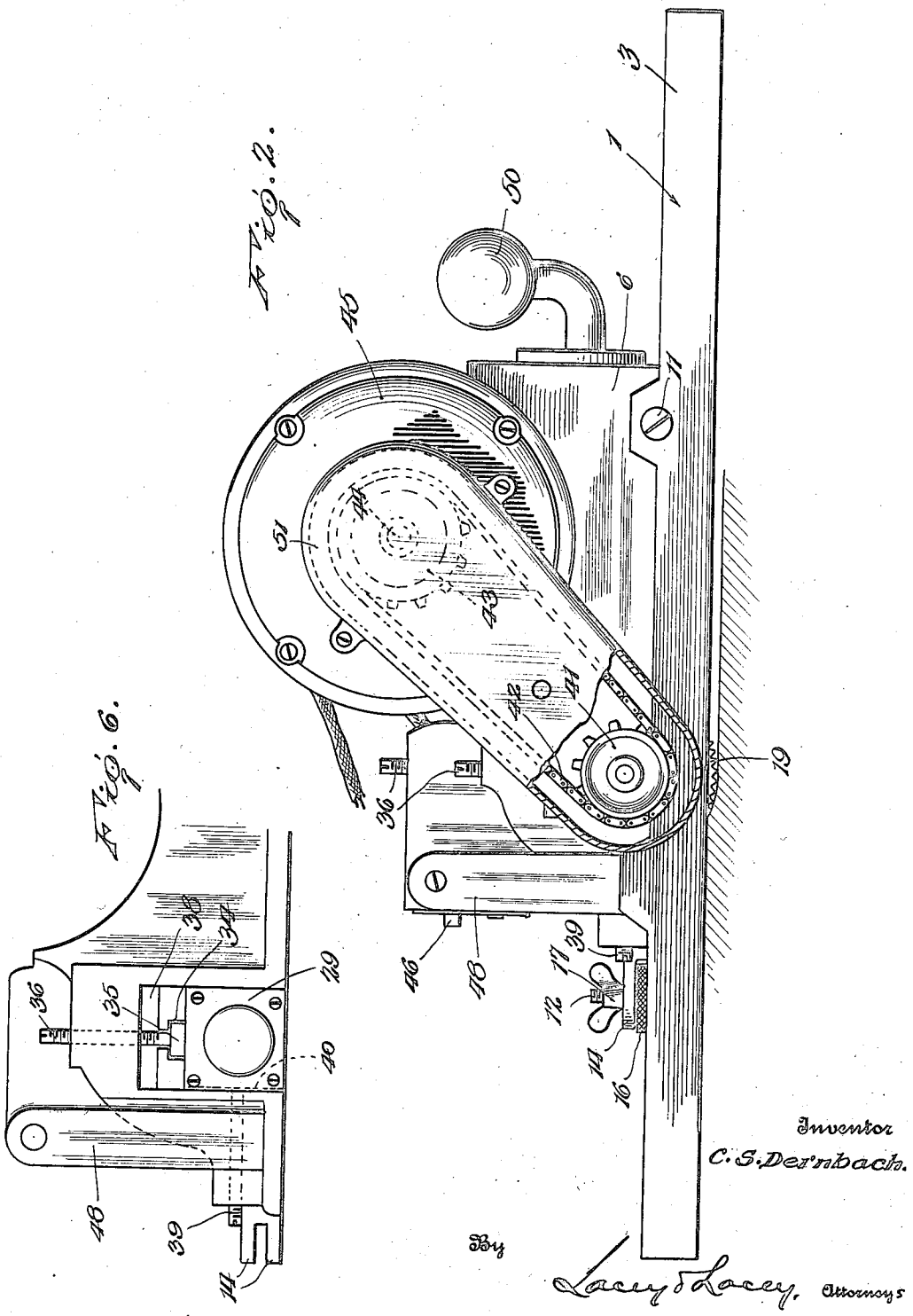
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 3.

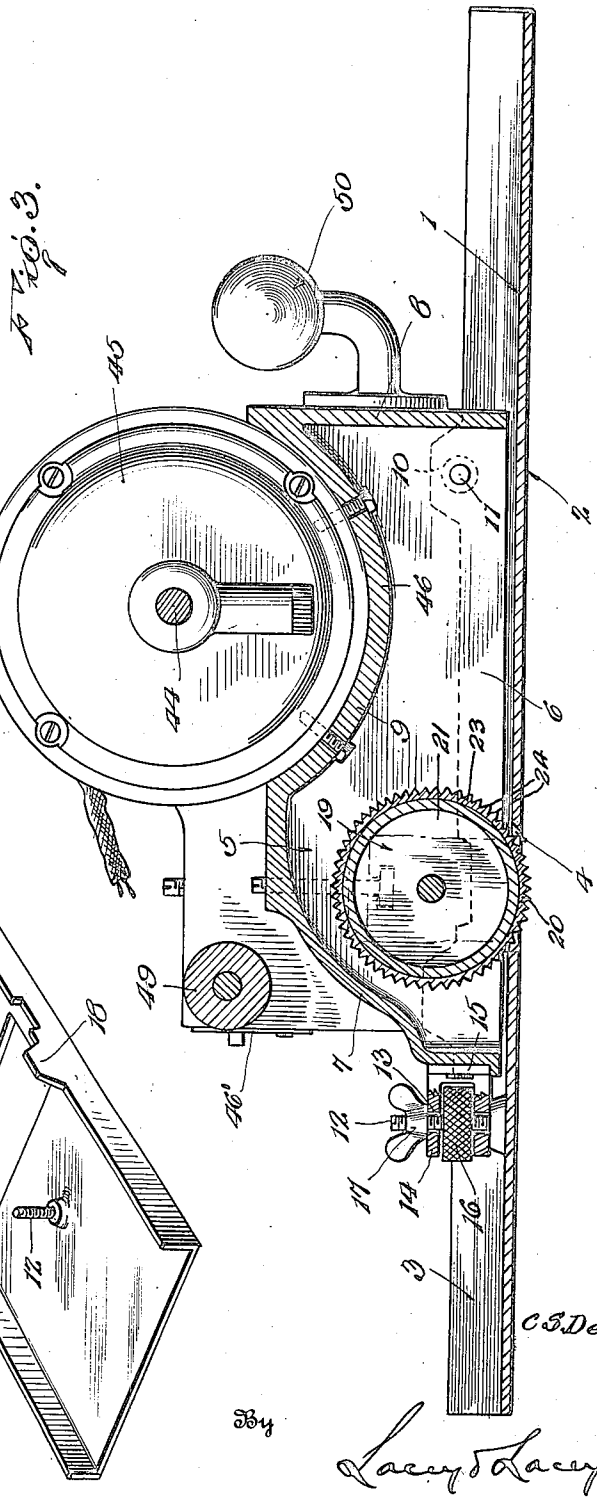
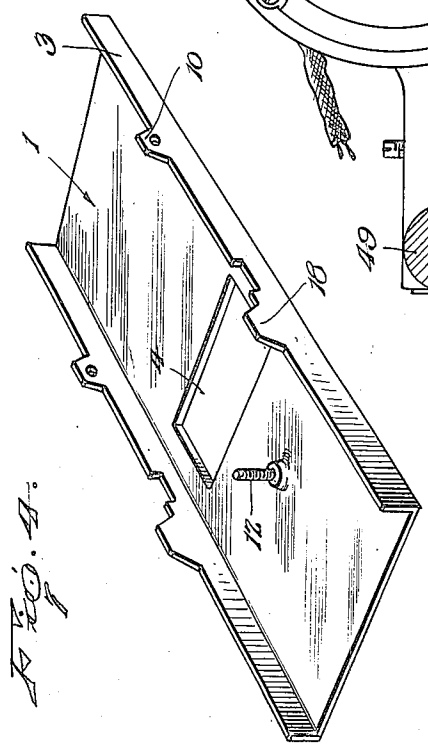


Fig. 4.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR DRESSING AND CLEANING WOOD SURFACES.

1,410,554. Specification of Letters Patent. Patented Mar. 28, 1922.

Application filed February 10, 1921. Serial No. 443,959.

To all whom it may concern:

Be it known that I, CHARLES S. DERNBACH, a citizen of the United States, residing at Wausau, in the county of Marathon and State of Wisconsin, have invented certain new and useful Improvements in Machines for Dressing and Cleaning Wood Surfaces, of which the following is a specification.

This invention relates to machines for dressing and cleaning wood surfaces and has as its general object to provide a machine which will prove useful and highly efficient in cleaning or resurfacing the blocks upon which leather is cut in shoe and other leather factories, meat blocks or boards, and likewise the surfaces of floors.

Another object of the invention is to provide a machine of the class mentioned which may be conveniently manipulated and which will be compact in form and adapted to be readily moved about over the surface to be dressed or cleaned.

Another object of the invention is to provide means whereby the abrading element of the machine may be adjusted to variously act upon the surface to be dressed or cleaned and to so mount this element that it may be readily dismounted and one of a different type substituted, so as to adapt the machine for use in dressing or cleaning wood surfaces of various kinds, and in various ways.

In the accompanying drawings:

Figure 1 is a perspective view of the machine embodying the invention;

Figure 2 is a side elevation of the machine;

Figure 3 is a vertical longitudinal sectional view therethrough, the motor being shown in elevation;

Figure 4 is a perspective view of the base of the machine;

Figure 5 is a detail vertical longitudinal sectional view through one type of abrading element and mounting means for the same;

Figure 6 is a side elevation of a portion of the body of the machine removed from the base.

The machine embodying the present invention includes a base which is indicated in general by the numeral 1 and which has a smooth plane under surface 2 adapting it to be slid about over the surface to be dressed or cleaned. At its opposite longitudinal edges the base 1 is provided with upstanding flanges 3 and near its forward end it is formed with a transversely extending relatively wide slot 4 through which the abrading element of the machine is to operate in the manner shown in Figure 3 and as will presently be explained.

The abrading element above referred to is rotatably mounted within the housing or casing which is indicated in general by the numeral 5 and this casing includes sides 6, a front wall 7, a rear wall 8, and a top wall 9, the casing being open at its bottom as shown in said Figure 3. The flanges 3 are provided, rearwardly of the point of location of the slot 4, with lugs 10, and pivots 11 are fitted through these lugs and into or through the lower rear corners of the sides 6 of the casing 5 so that in this manner the casing is connected at its rear end with the base 1 in such a manner that it may be swung upwardly and downwardly with relation to the plane of the under surface 2 of the base, and in order that this adjustment may be readily effected, the base is provided, forwardly of the slot 4, with an upstanding threaded stud 12 which extends freely through the openings 13 formed in the spaced upper and lower portions 14 of a bracket member 15 which is suitably fixed upon the front wall 7 of the casing. A milled adjusting nut 16 is threaded onto the stem 12 and bears between the spaced portions or ears 14 of the bracket 15 and it will be understood that by rotating this nut the forward end of the casing 5 may be raised or lowered as required. In order that after such adjustment has been effected, the casing may be secured in its position of adjustment, a wing nut 17 is threaded onto the upper end of the stem 12 and may be turned down to bear firmly against the upper one of the spaced portions or ears 14 for the purpose stated, this nut 14 serving as a jamb nut. The lower portion of the casing 5 is received between the flanges 3 of the base, and if desired the flanges 3 may be provided with upstanding guiding extensions 18 to extend at opposite sides of the forward portion of the casing and thus brace this end of the casing against lateral displacement. In connection with the machine there may be employed various types of abrading elements, and in the drawings the abrading element is indicated in general by the numeral 19. As illustrated in Figure 5 of the drawings, the abrading element 19 comprises a cylindrical hollow body 20 in the ends of which are secured heads 21 by shrinking or otherwise,

and onto which is removably fitted and secured, as for example by screws 22, a cylindrical body 23 provided upon its exterior surface with rasp teeth 24 which may be of any appropriate design. The shaft 25 is secured near its ends through the heads 21 and projects beyond the said heads and has its projecting ends rotatably journaled in suitable bearings indicated in general by the numeral 26. Each of these bearings comprises a block 27 chambered to receive roller bearings 28 which surround the respective end of the shaft 25, caps 29 and 30 being disposed and secured against the outer and inner faces of the said blocks respectively, and one of said caps 29 being closed so as to cover the respective end of the shaft 25 and the other cap being formed with an opening 31 through which the other end of the said shaft may project. The last-mentioned cap 20, and the caps 30, which latter are likewise provided with openings 32 to receive the respective ends of the shaft 25, may be provided with packing glands 33 so that a lubricant may be retained about the journaled ends of the shaft. Each block 27 is provided at its top with undercut oppositely disposed bosses 34 receiving in their recessed portions the heads 35 of adjusting screws 36 which are threaded through threaded openings 37 formed in portions of the side walls 6 of the casing 5. It will now be evident that by adjusting the screws 37 the bearings 26 may be adjusted upwardly or downwardly so as to vary the distance to which the lower side of the abrading element 19 projects through the opening or slot 4 or below the plane of the under side 2 of the base 1, and thus the abrading element may be adjusted to obtain a coarse or fine cut as required. At this point it may be stated that while the drawings illustrate the use of an abrading element having a rasp surface, it will be understood that a wire brush may be substituted for said element, and in fact various kinds of cutters or abrading elements may be employed depending upon the nature of the work to be done. The bearings 26 operate in slots 38 formed in the opposite side walls 6 of the casing 5, and in order that the bearings may be secured in the positions to which they are adjusted, set screws 39 are threaded through the forward corner portions of the casing and bear at their inner ends in grooves 40 formed in the forwardly presented sides of the bearing blocks 27, these set screws being adapted to be tightened to bind the said blocks after the desired adjustment has been obtained by adjusting the screws 36.

A sprocket gear 41 is fixed upon that end of the shaft 25 which projects through the opening 31 in the cap 29, and a sprocket chain, preferably of the roller type, indicated by the numeral 42, is passed about this gear and about a similar gear 43 fixed upon the shaft 44 of an electric motor 45. The motor 45 is seated and secured within a depressed portion 46 of the top wall 9 of the casing rearwardly of the abrading element 19 as best shown in Figures 1, 2 and 3 of the drawings, and any suitable type of switch 46′ is arranged within a hollow extension 47 formed at one side of the top of the casing 5 and may be manipulated for the purpose of controlling the supply of current to the motor.

By reference to Figure 3 of the drawings, it will be observed that the lower side of the abrading element 19 is received within the slot 4 in the base 1 and projects through this slot and slightly below the plane of the under face 2 of the said base so as to act upon the surface over which the base is slid for the purpose of dressing or cleaning the surface, depending upon the character of the abrading element employed.

In order that the machine may be readily moved about over the surface to be dressed or cleaned, the casing 5 is provided at one side of its forward portion with an upstanding arm 48 in the upper end of which is mounted one end of the horizontally disposed hand grip 49, the other end of which grip is mounted preferably in one side of the casing 47. Likewise a weighted handle knob 50 is secured upon the rear wall 8 of the casing 5, and it will be understood that the hand grip 49 is to be grasped with one hand and the knob 50 with the other hand for the purpose of moving the machine about over the surface to be treated. It will also be observed that the switch 46′ is located conveniently to the hand grip 49 so that it may be readily manipulated to stop and start the motor while the machine is being bodily moved.

Any suitable guard 51 may be provided to house the gears 31 and 43 and the sprocket chain 42.

Having thus described the invention, what is claimed as new is:

1. In a machine of the class described, a base having an opening therein, a casing mounted upon the base and having its rear end pivotally connected therewith for tilting adjustment with relation thereto, an abrading element operating within the casing and through the said opening, a threaded member upon the base, a threaded member upon the casing, one of said members being adjustable with relation to the other whereby to provide for adjustment of the said casing, a handle carried by the casing at the rear of the threaded member, and a weighted knob extending rearwardly from said casing at the rear of its pivotal connection with the base.

2. In a machine of the class described, a base having an opening therein, a casing

pivotally mounted at its rear end upon the base whereby its forward portion may be tiltably adjusted with relation to the base, a rotary abrading element within the casing operating within the opening in the base, a weighted knob carried by the pivoted end of the casing, means at the forward end of the casing operable to adjust the said casing upon its pivot, and means for holding the casing in adjusted position.

3. In a machine of the class described, a base having an opening therein, a casing arranged above the base, the base having upstanding side flanges between which the casing is positioned, means pivotally connecting the casing at its rear portion with the said flanges whereby to provide for tilting adjustment of the forward portion of the casing, a weighted knob projecting rearwardly from the pivoted end of the casing an abrading element operating within the casing and through the said opening in the base, an upstanding threaded stud upon the base in front of the casing, spaced ears projecting from the front of the casing and apertured to receive the said stud, an adjusting ring nut arranged between the ears and adjustably threaded onto the stud, and a lock nut threaded on the upper end of the stud and adapted to bear against the adjacent ear for holding the casing in adjusted position.

4. In a machine of the class described, a base having a transverse opening therein and provided with upstanding side flanges, a casing having its rear end pivotally mounted for tilting movement between the flanges and its upper portion formed with a saddle-shaped depression, a threaded stud projecting vertically from the base in advance of the opening therein, spaced ears carried by the forward end of the casing and having alined openings for the reception of the stud, means interposed between the ears and engaging the stud for adjusting the casing vertically with respect to the base, other means carried by the stud and engaging the adjacent ear for holding the casing in adjusted position, an abrading element disposed within the casing and projecting through the slot in the base, a motor seated in the saddle depression and operatively connected with the abrading element, a handle carried by the forward end of the casing, and a weighted knob projecting rearwardly and upwardly from the casing at the rear of its pivotal connection with the base flanges.

5. A machine of the class described including a base having upstanding side flanges and provided with a transverse opening, a casing having its rear end pivotally mounted for tilting movement between the flanges, means for adjusting the casing with respect to the base and holding it in adjusted position, an abrading element mounted for rotation in the casing at the opening in the base, said casing having its upper wall provided with a saddle-shaped depression and one of its side walls formed with a hollow extension, a standard arranged opposite said extension, a horizontally disposed handle supported by the standard and said extension, an electric motor seated in the saddle-shaped depression and operatively connected with the abrading element, a switch housed within the hollow extension for controlling the flow of current to the motor, and a rearwardly and upwardly extending weighted knob carried by the casing at the rear of its pivotal connection with the base flanges.

6. In a machine of the class described, a base having upstanding side flanges and provided with a transverse opening, there being a pair of perforated lugs formed on the flanges at one side of the opening and a pair of upstanding guiding extensions formed on the said flanges at the opposite side of the opening, a casing having its rear end pivotally mounted between the perforated lugs and its forward end movable between the guiding extensions, the top of the casing being provided with a saddle-shaped depression, a vertically adjustable abrading tool mounted for rotation within the casing and projecting through the opening in the base, a motor seated in the saddle-shaped depression, means for transmitting motion from the motor to the abrading tool, means for tilting the casing upwardly and holding it in adjusted position, independent means for adjusting the abrading tool vertically and holding it in adjusted position, a transverse handle carried by the forward portion of the casing in advance of the abrading tool, and a weighted handle projecting rearwardly and upwardly from the casing at the rear of its pivotal connection with the perforated lugs.

In testimony whereof I affix my signature.

CHARLES S. DERNBACH. [L. S.]