April 28, 1936. A. C. DE LANGE 2,038,648

MEAT BLOCK CLEANING MACHINE

Filed March 25, 1935

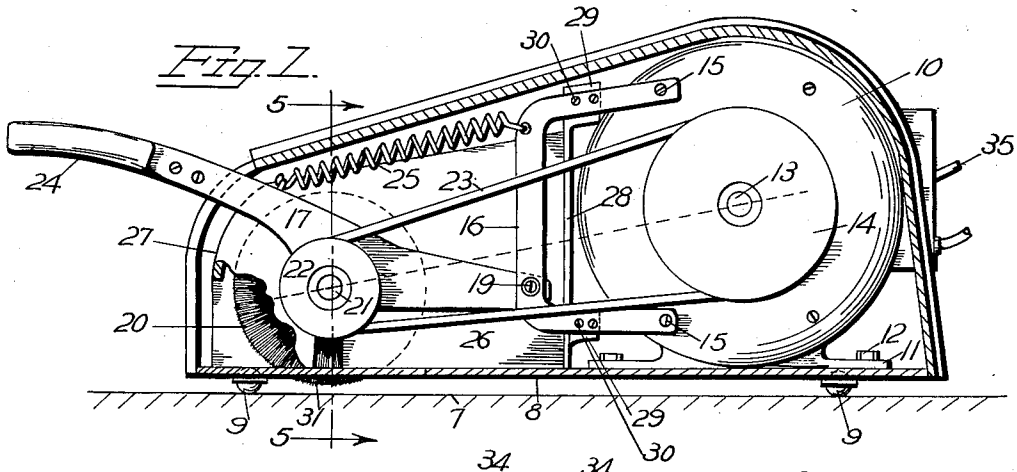


Fig. 1.

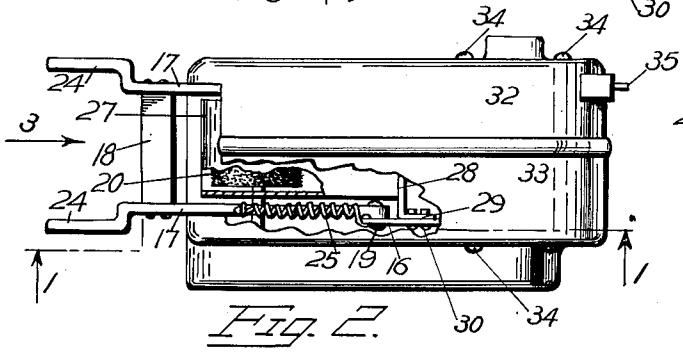


Fig. 2.

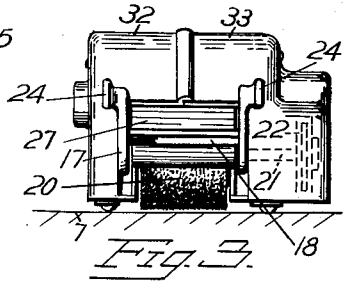


Fig. 3.

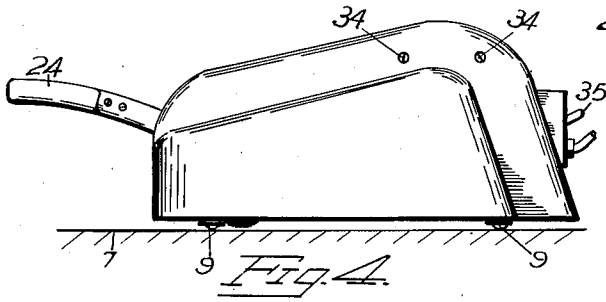


Fig. 4.

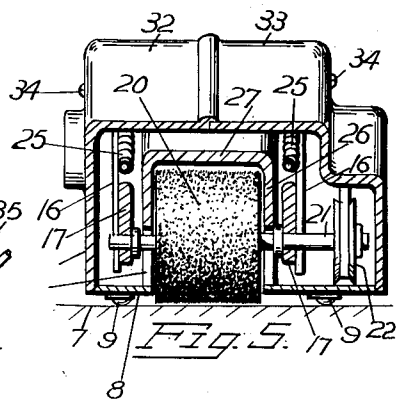


Fig. 5.

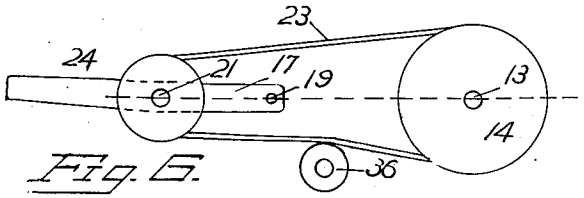


Fig. 6.

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MEAT BLOCK CLEANING MACHINE

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4 Claims. (Cl. 15—93)

This invention relates to improvements in block cleaning machines and has special reference to a machine for use in cleaning and resurfacing butcher blocks, the upper surfaces of which have become rough or unsanitary.

It is well known that butcher blocks must be carefully cleaned every day in order to keep the surface in a sanitary condition and for this purpose many different kinds of hand tools, such as scrapers, wire brushes and the like, as well as some motor driven cleaning machines have been used.

When the cleaning operation is performed by a hand tool it becomes tedious and laborious. Since the cleaning must be done after business hours when the meat cutter is tired from his day's work, the task is always an unwelcome one and is therefore frequently indifferently done.

It is the object of this invention to produce a simple and substantial, electrically operated, block cleaning machine by means of which the block may be expeditiously cleaned and resurfaced and which employs as the cleaning element, a rotary steel brush that serves, not only to remove unsanitary matter, but which also resurfaces the block to some extent.

Another object of this invention is to produce an electrically driven block cleaning machine that can be easily moved from one part of the block to another part, and in which the pressure of the brush against the block surface can be controlled by the operator.

A still further object of this invention is to produce a machine of this type that shall be so designed that the belt by means of which the brush is rotated, will be tightened when the brush is moved downwardly onto the work and which will therefore increase the frictional resistance of the belt and the pulleys to correspond to the resistance offered by the brush.

The above and other objects that may become apparent as the description proceeds are obtained by means of a construction and an arrangement of parts that will now be described, and for this purpose, reference will be had to the accompanying drawing in which the invention has been illustrated in its present form and in which

Figure 1 is a section taken on line 1—1, Figure 2, portions being broken away to better disclose the construction;

Figure 2 is a top plan view of the machine to a smaller scale than that employed in Figure 1 and with parts broken away;

Figure 3 is a front elevation, looking in the direction of arrow 3 in Figure 2;

Figure 4 is a side elevation of the machine;

Figure 5 is a section taken on line 5—5, Figure 1; and

Figure 6 is a diagram showing a possible modification.

In the drawing, reference numeral 7 designates the upper surface of a butcher block or other surface to be cleaned and 8 designates the base of the machine.

The base may be of any suitable metal but is preferably an aluminum casting which is supported on four ball casters 9. Attached to the upper surface of the base is an electric motor 10 whose base 11 is provided with openings for the bolts 12. The motor is mounted horizontally and has secured to one end of the drive shaft 13 a grooved pulley 14. Attached to opposite sides of the motor by means of the bolts 15 are U-shaped brackets 16. A brush-supporting frame comprising two substantially identical parallel members 17 are connected by a wide flat brace 18 and have their inner ends pivotally connected to the U-shaped members 16 at points 19. A steel brush 20 is provided with an axle or shaft 21 that is journalled in suitable bearings in the frame members 17. One end of axle 21 has a grooved pulley 22 and a side driving belt 23 passes around the pulleys 14 and 22 as shown in Figure 1. The center points of the shafts 13 and 21 have been shown as connected by a dotted line (13—21) and it will be noted that the pivot 19 is located below this line and therefore, if the frame is rotated counter-clockwise about its pivot, the distance between points 13 and 21 will increase and the tension in the belt will thereby be increased.

The tensioning of the belt when the brush is moved downwardly against the surface of the block, will always follow as long as the pivot 19 is below line 13—21 regardless of its transverse position. The automatic increase in the belt tension provides the required increase in friction to correspond to the increased resistance offered by the brush as its pressure against the block surface is increased.

By positioning the pivot 19 as above described, the belt tends to raise the brush from the work surface and therefore, if the operator releases his hold on the handles 24, the brush will immediately rise to an inoperative position. In the drawing, coil springs 25 have been shown as extending between the frame members 17 and the brackets 16 to normally hold the brush in inoperative, or

raised position. The springs assist the belt in raising the brush and although theoretically unnecessary, they have been found to be desirable.

The motor and the brush rotate in a counterclockwise direction when viewed as in Figure 1 and the brush will therefore throw the abraded material towards the motor and it is therefore necessary to enclose the brush in a housing and provide a wall between the brush and the motor. The brush housing is preferably cast in a single piece and has side walls **26**, a top **27** and an end wall **28**. The end wall has lugs **29** at the top and bottom of each side which are positioned to engage the inner surfaces of the brackets **16** and are secured to the latter by bolts or screws **30**.

The top **27** curves downwardly over the brush as shown in Figure 1 and terminates above the upper surface of the base so as to leave an opening through which the brush can be seen. The sides **26** are provided with curved slots **31** for the shaft **21**.

The motor, brush housing, and pulleys are enclosed in a housing formed from two parts **32** and **33** which are aluminum castings, formed as shown, to enclose the parts and give a pleasing and neat appearance to the finished machine. The two parts are secured to the motor by screws **34** that connect with the motor frame.

The motor is controlled by a switch whose handle has been designated by numeral **35** and which is usually a part of the motor.

In Figure 6, a diagram has been shown from which it will be seen that by providing a stationary idler **36** for one side of the belt to rest on, the pivots **19** can be on the line **13—21**, and even above this line, and the belt tension automatically increased as the brush is pressed downwardly onto the work.

The machine described above and illustrated on the drawing is placed on the top of a butcher-block or any other surface to be cleaned and the motor started. The operator grasps the handles **24** and presses the brush downwardly into contact with the block surface whereupon the brush functions to thoroughly clean the surface. The particles removed by the brush are thrown against the wall **28** which shields the motor. The pulleys and the belt are enclosed by the housing and there are therefore no parts exposed where a person can be injured.

From the above, it will be apparent that I have produced a simple and substantial butcher-block cleaning machine that can be easily constructed and assembled and which will effectively perform its intended function. The machine, on account of the position and the direction of rotation of the brush will operate along the outer edges of the block as well as any other place which is very important as the entire surface must be kept clean.

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

1. In a block cleaning machine, in combination, a substantially flat base, a motor attached to the upper surface thereof near one end, the other end of the base having an opening, a frame comprising spaced parallel members, a pivot for one end of the frame members, the pivot being positioned above the upper surface of the base, between the motor and the opening in the base, a brush horizontally journalled on and located between the members, in position to be moved into the opening in the base by a downward movement of the frame members, means for interconnecting the frame members, the ends of the frame members projecting beyond the brush to form handles, means for transmitting movement from the motor to the brush and yielding means for producing a force tending to raise the frame and the brush.

2. A mechanism in accordance with claim 1 in which a wall is positioned between the motor and the brush.

3. A mechanism in accordance with claim 1 in which the brush is partly enclosed by a housing.

4. A mechanism in accordance with claim 1 in which the base is provided on its under surface with casters for movably supporting it on a meat block.

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