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ROTARY BRUSHING DEVICE FOR OPERATING UPON PRESS PLATENS OR THE LIKE

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Fig. 1

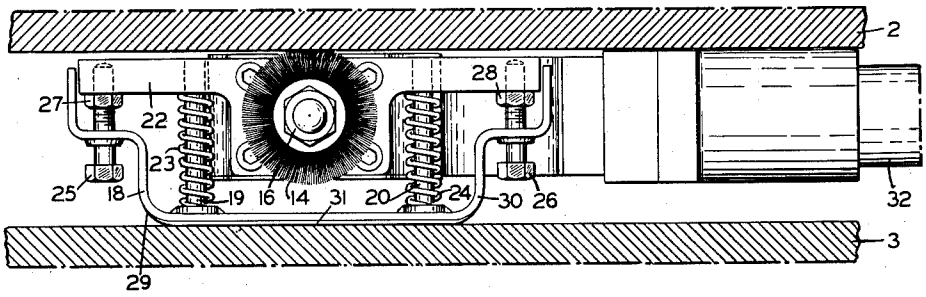
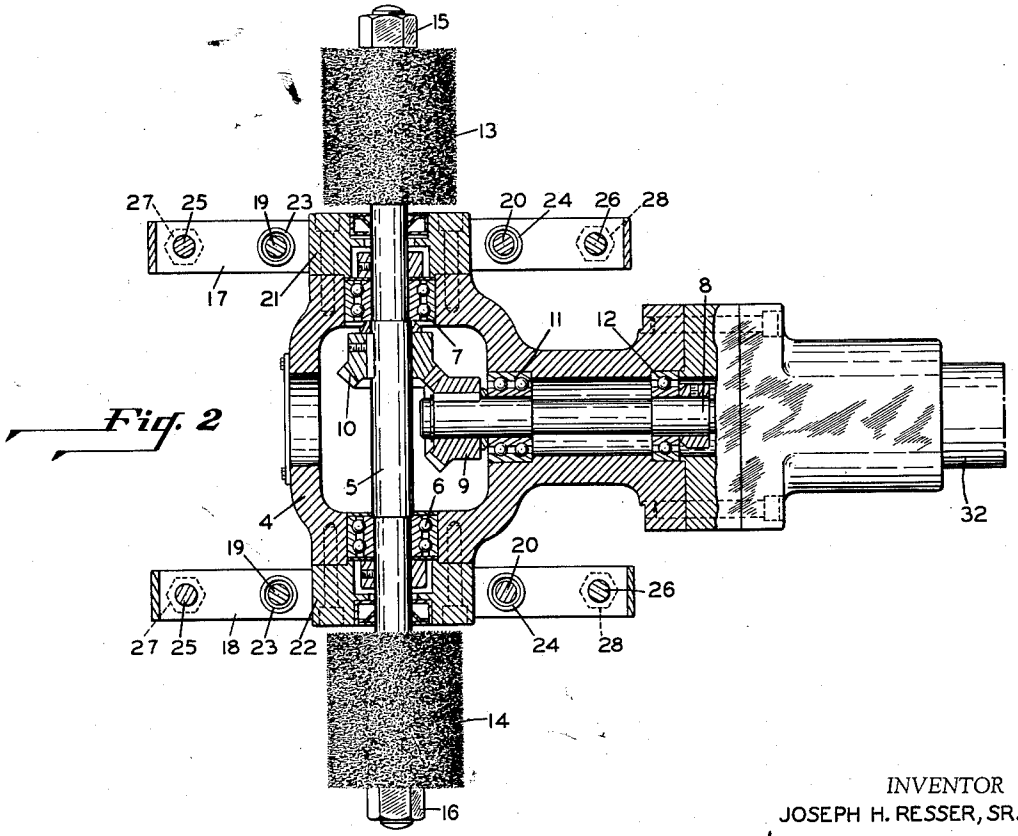


Fig. 2



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ROTARY BRUSHING DEVICE FOR OPERATING UPON PRESS PLATENS OR THE LIKE

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3 Claims. (Cl. 15—23)

This invention relates to a device for operating upon press platens or the like. It is concerned particularly with a device for cleaning, polishing, or lubricating press platens mounted in a press such as a hydraulic press for curing sheets of rubber or the like. Such presses may be of extended surface area—a 42" x 42" platen area is commonly employed in the fabrication of rubber tile—and may be separated a distance of but 2⅝" when the platens are fully parted. It is necessary on occasions to clean the press platens, and to do that without dismantling the press requires that the cleaning device be operated within a 2⅝" opening. Cleaning near the peripheral edges is not difficult, but it is difficult to clean the central area of the platen, particularly the upper platen of large surface area platen presses. Cleaning is commonly accomplished by the use of scrapers on long handles, operated by hand.

An object of the present invention is to provide a device for operating upon press platens in position in a press, the device being supported on one of a pair of opposed platen surfaces while operating upon the other.

Another object of the invention is to provide a device for operating upon press platens in position in a press in which the operating member of the device is yieldingly urged into engagement with the platen surface to be operated upon.

A further object of the invention is to provide a device of the class described above which is light in weight and may be operated by one workman standing in front of the press.

Other objects of the invention will be apparent from consideration of the following description of one embodiment of the invention, illustrated in the attached drawing, showing a platen-cleaning device.

In the drawing:

Figure 1 is a side elevational view of the device of the present invention inserted between press platens, illustrating the device in operation for cleaning the upper of a pair of platens as they would be arranged in a press; the press is not shown in the drawing; and

Figure 2 is a longitudinal sectional view of the device of Figure 1 showing the gear drive arrangement.

As shown in Figure 1 the device is designed for operation between spaced press platens **2** and **3** or similar surfaces. The device includes a housing **4**, preferably of aluminum or other lightweight metal, in which is mounted a spindle **5** journaled in ball bearings **6** and **7**. The spindle **5** may be driven through a drive shaft **8** (Figure 2) connected to a suitable power source by a flexible shaft, for instance. A bevel gear **9** is connected to shaft **8**, and an intermeshing bevel gear **10** is keyed to spindle **5**. Shaft **8** is journaled in ball bearings **11** and **12** received within housing **4**. Wire or other rotary cleaning brushes **13** and **14** are mounted on spindle **5** and are held in position by units **15** and **16** threaded onto the spindle.

Means are provided for yieldingly urging the brushes **13** and **14** into engagement with the platen to be cleaned.

In Figure 1, the surface of upper platen **2** is in position for cleaning. The yielding arrangement comprises a pair of runners **17** and **18** which are supported by pairs of guideposts **19** and **20** which are welded to the runners and are slideably received within openings provided in housing end caps **21** and **22**, one of which is shown in Figure 1. Springs **23** and **24** are disposed around the guideposts **19** and **20** and lie between the housing end caps and the runners to urge the brushes **13** and **14** into engagement with the surface to be cleaned and the runners into contact with the opposed platen surface. A pair of adjustable stops **25** and **26** are provided for each runner and are threaded into the housing end caps where they are held in adjusted position by locking nuts **27** and **28**.

The runners **17** and **18** are provided with curved ends **29** and **30** as shown in Figure 1 to facilitate insertion of the unit between the press platens and have a lower platen-engaging surface **31** of substantial extent to hold the unit in proper parallel relationship with respect to the press platens. If desired, a single wide runner yieldingly disposed with respect to the housing may be provided, but it is preferred to provide two independently sprung runners.

An operating handle **32** may be connected to the housing **4**. The length of the handle may vary in accordance with the size of the platens to be operated upon. The handle **32** may be in the form of a tube through which the shaft **8** or the cable of the flexible drive may pass.

In the operation of the unit for cleaning the upper platen **2**, the unit is forced into position between the platens **2** and **3**, compressing the springs **23** and **24**. Entrance of the unit into position is facilitated by the curved portions **29** and **30** of the runners **17** and **18** which when brought into engagement with the lower platen **3** exert an upward component of force, tending to compress springs **23** and **24**. When the unit is inserted or prior thereto, power rotation of the brushes **13** and **14** is effected to clean the surface of the upper platen **2** upon back-and-forth and lateral movement of the unit by the operator. To clean the lower platen **3**, the unit is removed from between the platens, is inverted, and the operation is repeated.

The device will be found useful not only for cleaning press platens but also for applying lubricant to them or for buffing and polishing them. For such operations, the wire brushes may be replaced with felt or cloth-buffing or lubricant-applying wheels. Sandpaper drums or soft bristle brushes also may be used for some operations. They are generically referred to therein as rotary brushes. In the lubrication operation, the use of motor power for driving the spindle **5** may not be necessary, and a hand crank may be provided on the drive shaft **8**.

I claim:

1. A device of the class described for insertion between spaced press platens or the like comprising a housing, a spindle projecting through said housing, rotary brushes mounted on opposite ends of said spindle and having a yieldable surface projecting above the housing for engagement with a platen and constituting the sole means projecting above said housing for engagement with said platen during operation of said device, a driving shaft journaled in said housing, gears in said housing connecting said shaft and spindle for rotation, a pair of runners for supporting said housing, platen-engaging surfaces on said runners for engagement with a platen surface opposed to the platen surface engaged by said rotary brushes, means connected to one of said housing and said runners and slideable within the other providing for relative movement between said housing and runners in a direction toward and away from the platens and connecting said housing and runners for movement in unison

in other directions, and yielding means interposed between said runners and housing for urging said rotary brushes and said runners into yielding engagement with their respective platen surfaces.

2. A device of the class described for insertion between spaced press platens or the like comprising a housing, a spindle projecting through said housing, rotary brushes mounted on opposite ends of said spindle and having a yieldable surface projecting above the housing for engagement with a platen and constituting the sole means projecting above said housing for engagement with said platen during operation of said device, a driving shaft journaled in said housing, means connecting said shaft and spindle for rotation, a pair of runners for supporting said housing, platen engaging surfaces on said runners for engagement with a platen surface opposed to the platen surface engaged by said rotary brushes, means connected to one of said housing and said runners and slideable within the other providing for relative movement between said housing and runners in a direction toward and away from the platens and connecting said housing and runners for movement in unison in other directions, and yielding means interposed between said runners and housing for urging said rotary brushes and said runners into yielding engagement with their respective platen surfaces.

3. A device in accordance with claim 2 in which guideposts are provided connected to said runners and received within openings in said housing providing for relative movement between said housing and runners in one direction and connecting said housing and runners for movement in unison in other directions, and in which stops are provided mounted on said housing and slideably received within openings in said runners.

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