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C. C. STUART.

AUTOMATIC YIELDING SECTIONAL PRESSURE BARS FOR SANDPAPERING MACHINES.

APPLICATION FILED SEPT. 4, 1902.

NO MODEL.

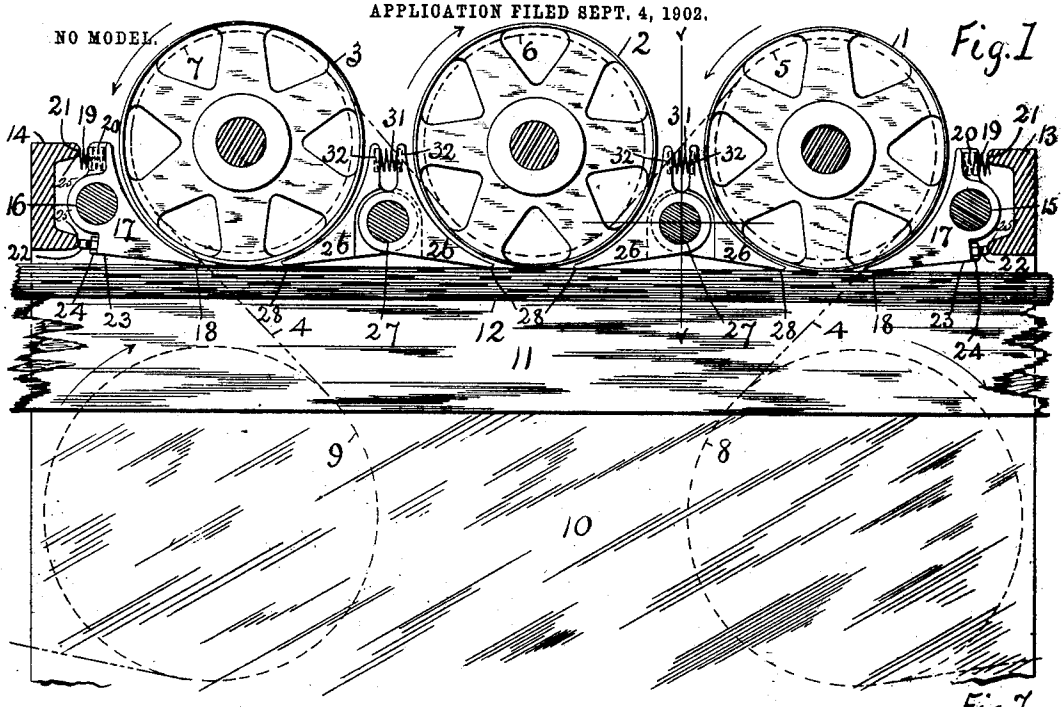


Fig. 1

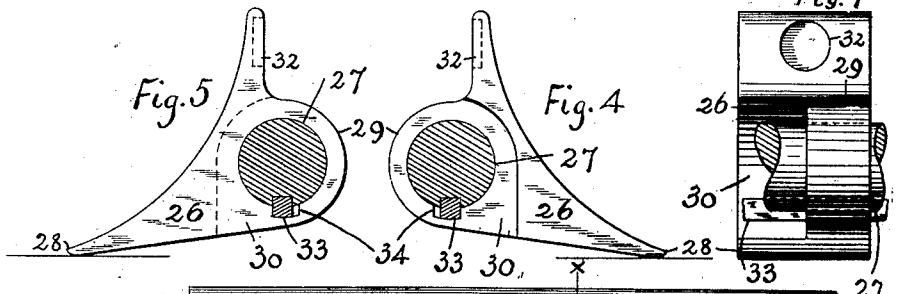


Fig. 5

Fig. 4

Fig. 7

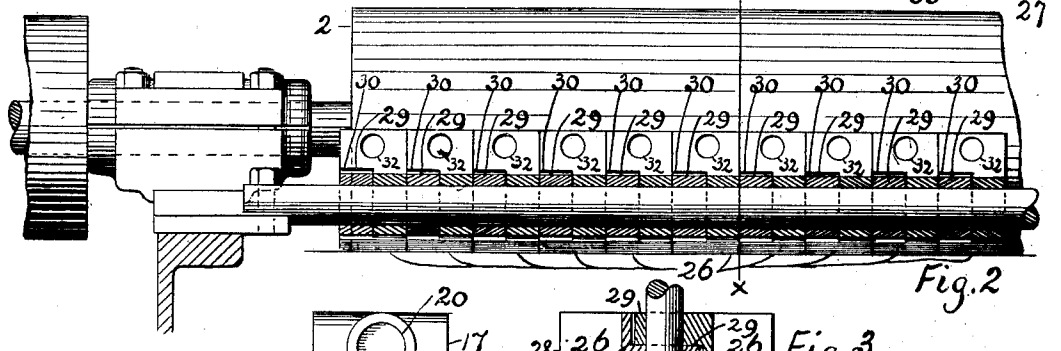


Fig. 2

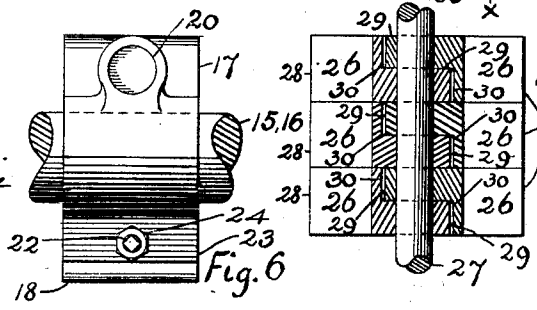


Fig. 3

Fig. 6

Witnesses.
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No. 732,134. Patented June 30, 1903.

UNITED STATES PATENT OFFICE.

CHARLES C. STUART, OF CAMPVILLE, CONNECTICUT, ASSIGNOR TO CRESWELL & WATERS CO., A CORPORATION OF PENNSYLVANIA.

AUTOMATIC YIELDING SECTIONAL PRESSURE-BAR FOR SANDPAPERING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 732,134, dated June 30, 1903.

Application filed September 4, 1902. Serial No. 122,038. (No model.)

To all whom it may concern:

Be it known that I, CHARLES C. STUART, a citizen of the United States, residing at Campville, in the county of Litchfield and State of Connecticut, have invented certain new and useful Improvements in Automatic Yielding Sectional Pressure-Bars for Sandpapering-Machines, of which the following is a specification.

The object of my invention is to construct a sandpapering-machine with multiple abrasive drums mounted above a horizontally-movable platen in which the drums may be coated with different grades of abrasive material, as coarse, medium, and fine, and preferably rotated in opposite directions.

A further object is to provide automatic sectional pressure-bars intermediate to the inner drum sides, front of the first drum, and back of the last drum to thereby securely press the stock to be worked to the platen throughout its width regardless of inequalities of thickness, warping, or twisting. Therefore I have constructed the pressure-bars in independent movable sections throughout their length for the front and back bars, and for the intermediate bars, which are likewise in independent sections, the sections are also in parts or duplex, with one half of the pair reaching under one drum and the other half reaching under an adjacent drum. Each section has independent means for pressure, so that all points are separately pressed, which provides an even pressure over the entire surface. This construction overcomes the defect of pressure-bars which are formed of a continuous or integral piece throughout their length. Each section and half or semi width or duplex section is mounted upon a support for independent oscillatory movement, so that while all sections are supported at a certain uniform position they form a flexible means of pressure adapted to engage the varying inequalities of thickness or twisted and warped surface of the stock being worked without the necessity of undue pressure on some parts to equalize the lack of pressure on other parts. It will be evident that by using one drum my sectional bars could be employed in combination therewith; but such use would be within my invention.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a cross-section through the drums and pressure-bars on line X X, Fig. 2. Fig. 2 is an elevation of a part of one of the drums and a pressure-bar in section, with its supporting-rod. Both ends being alike, only one end is fully shown. Fig. 3 is a section on line V V, Fig. 1, showing the manner of forming the semisections or duplicates of the intermediate pressure-bars, so that both sides of the bar are formed of semisectional pieces all alike. Fig. 4 is an enlarged elevation of one side of an intermediate-bar semisection, and Fig. 5 is an enlarged view of the opposite side of the same semisection. Fig. 6 is a rear elevation of an end-pressure-bar section. Fig. 7 is a rear elevation of an intermediate-pressure-bar semisection.

Similar figures of reference indicate similar parts throughout the views.

In Fig. 1 are shown abrasive drums 1 2 3, driven by a common belt 4 on their pulleys 5 6 7, the belt also passing over pulleys 8 9, located, preferably, on the framework 10 of the machine. The drums are above a platen 11, which has suitable driving means (not shown) to pass it under the drums, and on the platen is placed the stock 12 or object to be worked. The framework has end ties 13 14 of channel section, and thereto are secured rods 15 16, of circular cross-section, at the outer sides of drums 1 3 and extending across the machine. On rods 15 16 are placed side by side sections 17 of the pressure-bars until the whole bar is completed of the desired length. Each section is independent of every other section as to its movement on the rod 15 or 16, the movement being a partial rotation or oscillation or a movement of the toe 18 toward or from stock 12 and platen 11, the movements being effected by springs 19, placed in pockets 20 in the upper outer part of the sections 17, and at their outer end the springs bear against ribs 21 of end ties 13 14, which insures toes 18 (which pass under drums 1 3 as near the working face of the

drum as possible) to independently press their portion of the stock 12 regardless of the pressure being exerted by any other section. In order to be enabled to limit the downward movement of toes 18, an adjusting-screw 22 is inserted in the heel 23 of each section 17. A lock-nut 24 is provided, and the limit of movement is by the abutting of screw 22 against rib 25 of end ties 13 14. Between drums 1 2 and 2 3 I have provided a form of intermediate pressure-bars in semisections in which all of the members are of a single semisectional form and are used to compose the entire bar by simply reversing them when being placed on their supporting-rod. Figs. 4, 5, 7 best show the formation, while Figs. 1, 2, 3 show their relative position when assembled. The semisections 26 are secured on rods 27, as seen in Fig. 1, with their toes 28 reversed, or one semisection with its toe under drum 1 or 2 to the right of its rod 27 and its fellow placed with its toe to the left of rod 27 under drum 2 or 3. In Fig. 7 it will be seen that each semisection has a hub 29 partially across its back and a recess 30 across the remaining part. The hub 29 incloses rod 27, and the hub of the reversed semisection passes over the rod into the recess 30, as clearly shown in Fig. 3. These semisections are each independent of the action of any other semisection, and each is provided with a spring 31, which seats at one end into pocket 32 of one semisection and at the other end into a similar pocket in an opposite semisection. The springs press toes 28 down to the stock 12. In order to limit the amount of oscillation or downward movement, splines 33 are inserted in rods 27, and a way 34 is cut in each hub 29 to abut the spline on its side toward toe 28 and to clear the spline at its opposite side, so that the toe is free to move up whenever the pressure under it is in excess of the power of spring 31.

It will readily be understood that the oscillating sectional and semisectional pressure-bars can be adapted for use on other classes of machines, as wood-planers and similar woodworking-machines, and I do not wish to be considered as limiting their use to sandpapering-machines.

I claim—

1. In a sandpapering-machine, multiple abrasive drums, means for their rotation, a platen for the machine, pressure-bars composed of sectional lengths, mounted for the independent oscillating movement of each section, and resilient means whereby the bars are caused to press toward the platen, and adjustable means to limit the movement of each section.

2. In a sandpapering-machine, a plurality of abrasive drums, means for their rotation, a platen, rods of circular cross-section, pressure-bars mounted thereon for partial rotation and formed of independent sections as to length, and with a portion of each section reaching under the drums aforesaid, and resilient means for each section adapted to press the underreaching portion toward the platen, and permit its recession therefrom, and adjustable means to limit the movement.

3. In a sandpapering-machine, a plurality of abrasive drums, means for their rotation, a platen, rods of circular cross-section, pressure-bars mounted thereon which are formed in sectional lengths, a portion of each section passing under the drums aforesaid, resilient means to oscillate the underreaching part of each section toward the platen, and permit its recession therefrom, and adjustable means to limit the movement toward the platen.

4. In a sandpapering-machine, a plurality of abrasive drums and means for their rotation, a platen, rods of circular cross-section, pressure-bars mounted on the rods, reaching under adjacent drums and formed in multiple and independent semisections, adapted to reach under adjacent drums, resilient means adapted to independently press each underreaching portion toward the platen aforesaid, and adjustable means to limit the movement.

5. In a sandpapering-machine, a plurality of abrasive drums, means for their rotation, a platen, rods of circular cross-section, pressure-bars mounted on the rods for oscillation, the bars being formed in sections of length and each section composed of interlocking and interchangeable semisections, resilient means adapted to press each semisection toward the platen aforesaid, independent of any other section, and permit its recession, and adjustable means to limit the movement in the pressure direction.

6. In a sandpapering-machine, a plurality of abrasive drums, pressure-bars of sectional lengths exterior to the outer drums, mounted for oscillatory movement and having multiple resilient pressure means and adjustable means to limit their movement; pressure-bars of semisectional interlocking length, located between the drums, mounted for oscillatory movement and having multiple resilient pressure means, adjustable means to limit the movement and a platen for carrying the material to be worked and whereon the pressure-bars aforesaid act.

7. In a sandpapering-machine, a platen, a plurality of abrasive drums, means to rotate adjacent drums in opposite directions, pressure-bars of independent end-to-end sections mounted for oscillatory movement, located exterior to the outer drums and having yielding means to press the bars toward the platen; and pressure-bars of independent semisectional lengths placed end to end mounted for oscillatory movement, located between adjacent drums, and having yielding means to press the bars toward the platen.

8. Pressure-bars formed in reversible sections of length, pivotally mounted for oscilla-

tory movement, and having independent pressure means for each section.

9. Pressure-bars formed of multiple members of a uniform configuration, or duplex parts, which by themselves or singly, form only a semisection of width, but when placed in reverse relation to another duplex or semi section forms one complete length and width section, means to mount the semisections for independent oscillatory movement, and independent pressure means for each semisection.

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

CHARLES C. STUART.

Witnesses:
R. C. WRIGHT,
WILLIAM C. STOEVER.