

(No Model.)

W. F. LARISH.
SANDING DRUM.

No. 491,658.

Patented Feb. 14, 1893.

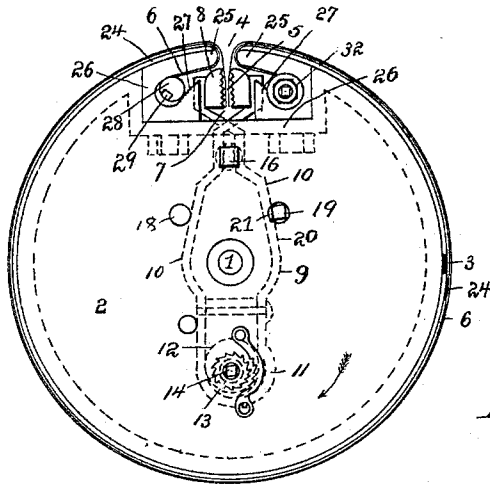


Fig. 2.

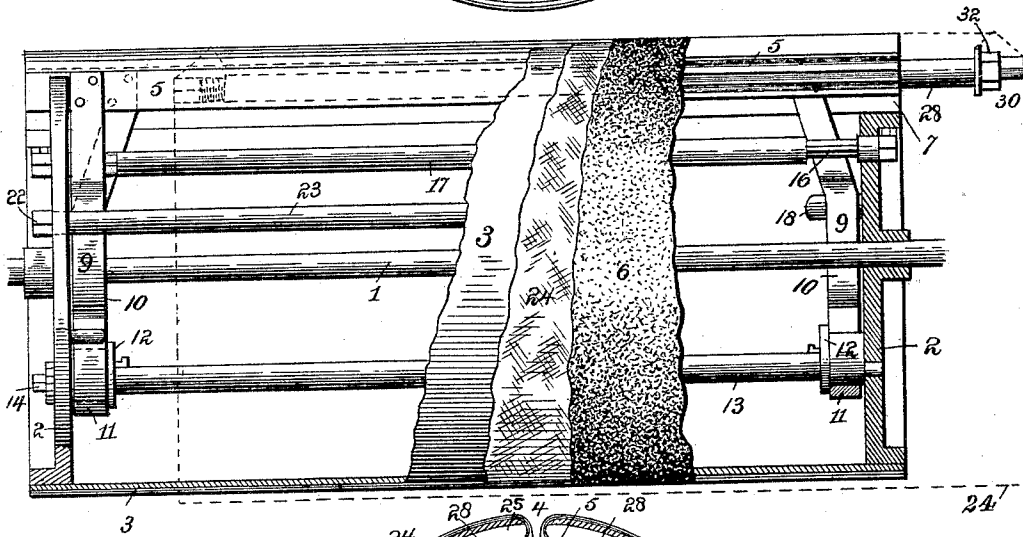
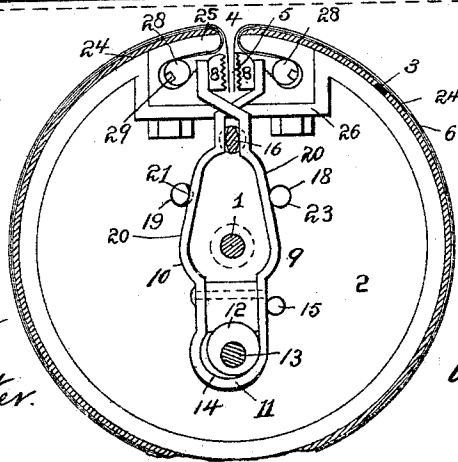


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILBUR F. LARISH, OF OSHKOSH, WISCONSIN.

SANDING-DRUM.

SPECIFICATION forming part of Letters Patent No. 491,658, dated February 14, 1893.

Application filed August 6, 1892. Serial No. 442,363. (No model.)

To all whom it may concern:

Be it known that I, WILBUR F. LARISH, a citizen of the United States, residing at Oshkosh, in the county of Winnebago, State of Wisconsin, have invented certain new and useful Improvements in Sanding-Drums; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

It is the object of my invention to provide improved means for securing the sanding paper or other material upon the surface of the sanding drum in such manner that it may be readily removed and replaced when worn out without delaying the machine and operator for more than the minimum length of time; that the abrading material may be smoothly and evenly stretched; and that it may be securely and tightly held in its stretched position. I have further provided means for stretching and holding a relatively soft backing material, such as canvas, by devices independent of those by which the sand paper is secured, thus rendering it certain that the latter shall have a smooth and even backing and shall not be caused to prematurely wear out and tear.

My invention further comprises improved means whereby the paper gripping jaws may be adjusted so as to accurately and securely hold paper of any desired thickness.

With such objects in view, my invention consists in the parts and combinations thereof hereinafter set forth and claimed.

In order to make the same more clearly understood I have shown in the accompanying drawings means for carrying the invention into practical effect, without, however, limiting the improvements in their useful applications to the particular construction which, for the sake of illustration, I have delineated.

In said drawings:—Figure 1 is an end view of a sanding drum embodying my improvements. Fig. 2 is a side view of the same partly in section. Fig. 3 is an end view of the drum partly in section, looking from right to left of Fig. 2.

Referring to the drawings, 1 indicates the sanding drum shaft, on which are secured in any suitable manner two or more heads or diaphragms, 2. The latter carry a cylindrical casing 3 in which, and also in the heads 2, is formed a longitudinal opening or slot 4. Through this slot the edges 5 of the sand paper or other abrading material 6 are passed after the sheet of such material has been wrapped once around the casing 3.

Extending the length of the drum, and passing through the heads 2 by openings formed therein, are jaws 8 preferably corrugated on their meeting faces or otherwise formed to obtain a firm grasp on the edges 5 of the paper when brought together. Said jaws are carried by two springs 9, one at each end of the drum, and by as many similar intermediate springs within the drum as may be found necessary or desirable, which will depend upon the length of the drum and the weight and stiffness of the jaw bars 8. Said springs have two legs 10, which cross each other and which, at or near the point or bend where they join, are formed with an eye or bearing 11. In the latter are fitted, one for each spring, cams or eccentrics 12, mounted upon and actuated by a through shaft 13. The latter has bearings in the heads of the drum and a square head 14 by which it may be turned. By thus operating the shaft 13, the springs 9 will be moved radially toward or from the slot or opening 4 with the result of loosening or tightening the sand paper, which is held by the jaws 8. When by a half turn in the direction of the arrow in Fig. 1, the swells of the eccentrics are pointed directly away from the shaft 1, they will be on the dead center and the sand paper will be stretched and the stretching devices locked in such position.

15 is a stop on the head 2, which arrests the spring when it and the eccentric are on the proper line to be locked.

Various means may be employed to force the jaws 8 together to grasp the paper preliminary to its being stretched. In the construction illustrated, I employ a double cam

pin 16, mounted in or on the head and situated between and engaged by the legs 10 of the spring, at a point beyond where they cross. By turning this pin, either its narrowest dimension may be brought between the spring legs to permit the jaws to separate and release the paper, as seen in Fig. 1, or its widest dimension be brought into action to spread the legs and draw the jaws together to secure the paper. In order to operate all of the springs 9 at once, I form the cam pins 16 upon, or connect them by a through shaft 17. The jaws may be separated by the resilience of the springs or by positive means. I have illustrated how the latter may be employed.

18 and 19 are stops mounted on the heads 2 opposite to the legs 10 of the springs. The latter are formed in the shape of, or provided with inclines 20, which approach each other in the direction of the opening 4. When, therefore, the springs are thrust radially in the direction of said opening, their legs are forced, by said stops, toward each other and the jaws 8 compelled to separate and release the paper. The stop 19 is rotary and provided with a cam or eccentric face 21; so that by turning and setting the stop by its squared head 22 the operative point of its face may be brought closer to or farther from the stop 18, thereby causing the legs of the spring and the jaws 8 to separate more or less when the springs are thrust forward, and adapting the jaws to receive a greater or less thickness of paper. For convenience of operation, the stops 19 of the various springs are joined by or formed on a through shaft 23.

In order to give the sand paper some capability of yielding, and increase its durability, I provide a layer 24 of a relatively soft material, such as canvas, beneath it of suitable thickness, and to make such layer perfectly even and without inequalities or wrinkles, which would cut through the sand paper in places before it was worn out as a whole, I provide a means for stretching it independently of the sand paper.

25 25 are two bars or lips which form the boundaries of the opening 4 already described, and are bolted to flanges 26 on the heads 2.

27 indicates corrugated or roughened recesses formed in the heads between which and the inner sides of the lips 25 rest rolls 28, extending from end to end of the drum. These rolls have grooves in which the edges of the canvas are secured by wedges 29 of wood or other suitable material. The rolls 28 with the canvas thus attached may be introduced into place longitudinally as shown by dotted lines in Fig. 2, and are provided with squared heads 30, by which they may be turned to stretch the canvas tightly and evenly over the surface of the drum. As they are thus turned, they will be, by the pull of the canvas, locked or wedged between the lips 25 and the wall of the recesses 27.

32 indicates jam nuts on the screw threaded ends of the rolls 28 by which the latter are held from endwise movement, and may be, when the canvas has been stretched, clamped to the heads 2.

The mode of operation of my improvement has been sufficiently set forth in the course of the foregoing description of its construction.

What I claim is:—

1. In a drum for sand paper or other abrading material, the combination of jaws for grasping the edges of the abrading material, the cam 16 for forcing said jaws together, and mechanism independent of said cam for moving said jaws radially inward or outward, substantially as set forth.

2. The combination with the drum and the grasping jaws and radially movable legs supporting the same, of a cam for forcing said jaws together, and means independent of said clamp for moving the jaws and legs radially.

3. The combination with the drum and grasping jaws, of the crossed legs supporting them, means for engaging said legs and separating them to force the jaws together, and an eccentric connected with the legs for moving them radially.

4. The combination with the drum and grasping jaws, of the crossed spring legs carrying the latter, the rotary cam pin between the legs, and the eccentric for moving them radially.

5. The combination with the drum, the grasping jaws, and the legs 10 supporting them and having the inclines 20, of stops engaging said inclines 20, means for moving the legs radially along said stops to open the jaws, and independent mechanisms whereby the jaws are moved toward each other to clamp the paper, substantially as set forth.

6. The combination with the drum, of a pair of longitudinally extending grasping jaws, and independent mechanisms adapted to be separately operated at different times for forcing said jaws toward each other and for moving them radially, substantially as set forth.

7. The combination with the drum, having end apertures and means for holding the abrading material, of an underlying sheet of relatively soft material, and means for stretching the latter consisting of rolls which are removable from the drum through said apertures with the said soft material attached thereto, substantially as set forth.

8. The combination with the drum, having end apertures and holding jaws or surfaces 27, of a relatively soft material such as canvas for underlying the abrading material, and rolls for stretching said canvas longitudinally removable through said apertures and adapted to be held by said jaws or surfaces 27, substantially as set forth.

9. In a sanding drum the combination of the grasping jaws, springs supporting the same, eccentrics for moving said jaws bodily

inward or outward, and a cam pin engaging both of said jaws for operating them relative to each other, substantially as set forth.

5 10. In a sanding drum the combination of the grasping jaws 8, springs 9, supporting the same and having inclines 20, stops 18 and 19, cam pin 16, engaging both legs of said springs and means for moving the springs 9 radially.

11. In a sanding drum, the combination of

the grasping jaws 8, springs 9 supporting the same, cam pins 16, means for moving the springs radially, and rolls 28.

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

WILBUR F. LARISH.

Witnesses:

HENRY LANG,

DAVID LAWSON.