A. L. F. MITCHELL.

Hat Shearing and Finishing Machine.

No. 221,593. Patented Nov. 11, 1879.

Fig. 1.

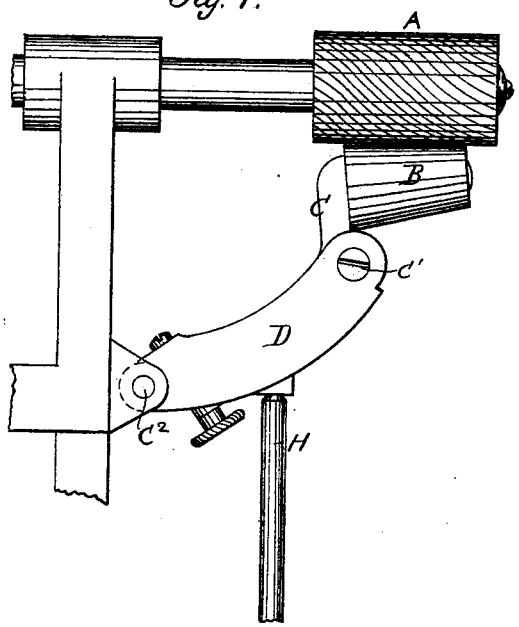


Fig. 2.

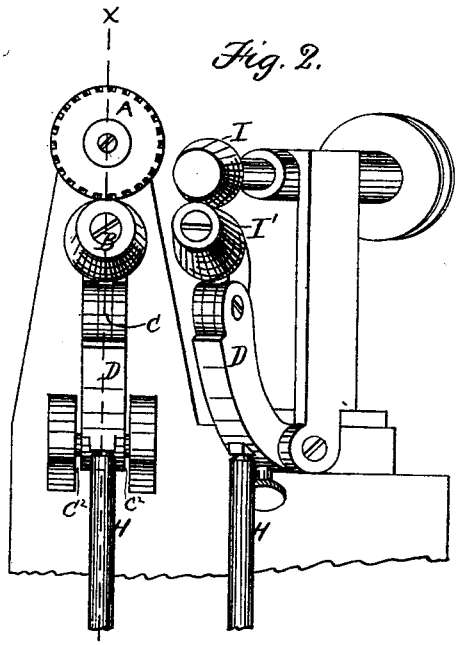
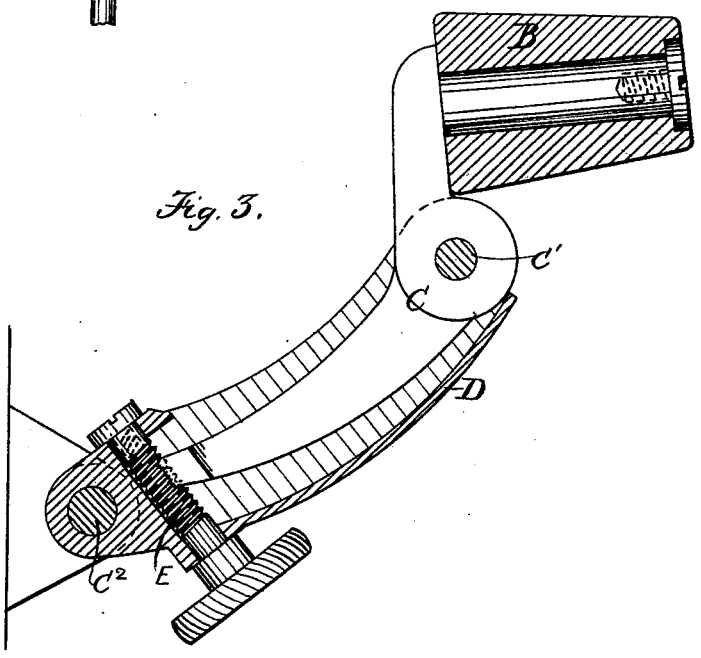


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE

ALBION L. F. MITCHELL, OF METHUEN, MASSACHUSETTS.

IMPROVEMENT IN HAT SHEARING AND FINISHING MACHINES.

Specification forming part of Letters Patent No. **221,593**, dated November 11, 1879; application filed September 1, 1879.

To all whom it may concern:

Be it known that I, ALBION L. F. MITCHELL, of Methuen, in the county of Essex and State of Massachusetts, have invented certain Improvements in Hat Shearing and Finishing Machines, of which the following is a specification.

This invention relates to that class of hat shearing or finishing tools employing a rotating tool to shear or remove a portion of the material on the surface of a hat-body and a bed to support the hat-body and present it to the rotating tool, said bed being pressed toward the rotating tool during the operation, so as to press the hat-body directly against the rotating tool. Heretofore the bed has been a block adapted to be moved toward and from the rotating tool, but not to rotate, so that the same portion of its surface is always brought or used to support the hat-body, and consequently becomes worn or hollowed out by continued use. Such a bed requires frequent repairing or resurfacing; for, if used when worn or hollowed, the hat-body is injured and given an uneven or corrugated appearance. Moreover, when such a bed is used the hat-body is liable to be stretched and distorted by friction between the rotating tool and non-rotating bed.

My invention has for its object to provide a bed which shall be free from the above-named objections; and to this end it consists in making the bed a friction-roller.

The invention also consists in the means provided for adjusting the friction-roller, all of which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side elevation of a portion of a machine embodying my invention. Fig. 2 represents an end elevation of the same; and Fig. 3 represents a section on line *x x*, Fig. 2.

In the drawings, A represents a rotary tool for removing a portion of the material from the surface of the hat-body. Said tool is preferably a metallic roll, grooved to form cutting-edges and intermediate smooth surfaces, as shown in the Letters Patent issued to me August 26, 1879, No. 219,001, for hat-shearing machine. Although it may be of any suitable construction adapted for use in the class of machines to which my invention relates, said tool is located on an arbor supported in bearings in a suitable frame—such, for example, as is shown in said patent.

B represents the bed or support for the hat-body, which forms the chief part of the present invention. Said bed is simply a friction-roll adapted to rotate freely on a journal formed on the end of a movable supporting arm or lever, C, hereinafter described. The bed or roller B may be tapering, as shown, or of uniform diameter, and is located under the tool A, with its axis in the same plane with the axis of the tool A, and is capable of being moved so that its entire length may be brought in contact with the tool A, as shown in Fig. 1. The lever C, on which the roller B is journaled, is pivoted at C′ to a hollow curved arm, D, which is pivoted at C^2 to the frame of the machine, and is provided with a worm, E, which is journaled in the arm D and engages with the end of the lever C, the latter being provided with teeth meshing with the threads of the worm, the whole constituting a worm-gear, by means of which the lever C may be turned on its pivot to vary the inclination of the roller B. The arm D is supported by a rod, H, which rests on a treadle or other device by which the arm D, with its attachments, may be raised and lowered, as shown in my patent above named.

By the described construction of devices supporting the roller B the latter can be readily raised to press a hat-body placed upon it against the tool A, lowered to separate the hat-body from the tool, and inclined to bring one of its ends nearer the tool A than the other when it is desired to make the hat-body of varying thickness.

Suitable feed-rollers I I′ are employed to feed the hat-body during the operation. Said feed-rollers are arranged to operate like the feed-rollers in the above-named patent, and the general operation of the machine is the same as described in said patent. The lower feed-roller, I′, is preferably supported by mechanism which is a duplicate of that above described for supporting the roller B, so that

said feed-roller is capable of the same motions and adjustments as the roller B.

It will be seen that a friction-roller as a supporting-bed is subjected to but little wear, and that is distributed over its entire surface; so the expense of frequently resurfacing the bed is avoided. By the employment of the rolling-bed the friction between the hat and bed is reduced to the minimum, so that the hat is easily manipulated, and there is no liability of the hat being stretched by the joint action of the tool and bed, as there is when the bed does not rotate. The worm-gear enables the roller B to be held positively in either direction at any desired inclination.

I claim as my invention—

1. In a hat shearing or finishing machine, an adjustable loose or idle roll to support the hat-body, in combination with a positively-rotated finishing-roll, substantially as described.

2. The idle-roll B, its arm *c*, pivoted in the arm D and extended rearwardly and formed with teeth, the arm D and its lifting mechanism, and the worm E, combined and arranged substantially as shown and described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 21st day of August, 1879.

ALBION L. F. MITCHELL.

Witnesses:
CALVIN J. SARGENT,
C. F. BROWN.