

J. T. HARRIS.

Top-Roll Clearers for Drawing and Spinning-Machines.

No. 151,697.

Patented June 9, 1874.

Fig. 1.

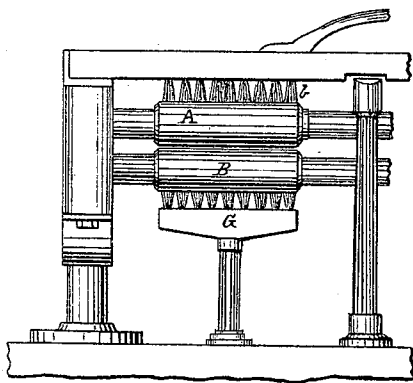


Fig. 2.

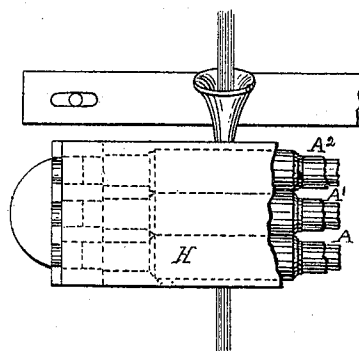


Fig. 3.

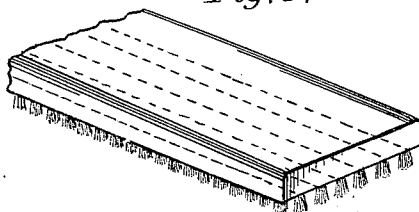


Fig. 4.

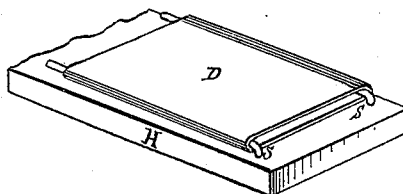
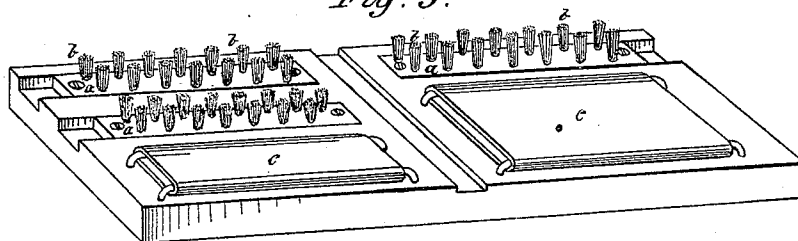


Fig. 5.



Witnesses.
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UNITED STATES PATENT OFFICE.

JAMES T. HARRIS, OF RICHMOND, RHODE ISLAND.

IMPROVEMENT IN TOP-ROLL CLEARERS FOR DRAWING AND SPINNING MACHINES.

Specification forming part of Letters Patent No. **151,697**, dated June 9, 1874; application filed June 13, 1873.

To all whom it may concern:

Be it known that I, JAMES T. HARRIS, of Richmond, in the county of Washington and State of Rhode Island, have invented a new and useful Improvement in Clearers for Top Rolls of Drawing-Frames and Spinning-Machinery, of which the following is a specification, referring to the accompanying drawing making part of the same, in which—

Figure 1 is a front elevation of a set of drawing-rollers with my improved clearers. Fig. 2 is a top view of the same. Fig. 3 is a perspective view of a brush-clearer for the top rolls, such as has heretofore, to some extent, been used. Fig. 4 is a perspective view of the cloth-clearer now in general use for top rolls. Fig. 5 represents in perspective one of my improved top-roll clearers.

Similar letters mark like parts in all the figures.

My invention consists in applying a brush or a clearer, composed in part of brush and part cloth, to the top rolls of drawing-frames and spinning-machinery, the object being to prevent the fibers from collecting and winding upon the top-roll, and to clean and clear the top rolls from all lint and foreign matter. Heretofore, in most cases, a brush has been applied to clear the under roller, where nothing else but bristles could resist the abrasion of its grooved metallic surface. In some instances the brush has also been employed in connection with the leather-covered top rolls, but in most cases, owing to their having a fine smooth surface, a clearer of coarse woolen cloth has been deemed sufficient and best for removing and preventing the accumulation of the fiber in the drawing operation. In practice, however, it is found that with the cloth-clearer the fibers will collect and wind in a mass around the top rolls, so that the drawing operation will be practically suspended, and it becomes necessary to remove the roll from the machine and strip the fiber from it by hand, whereas, the brush, if applied to but one of the top rolls, in connection with the cloth-clearer, is found to practically obviate this difficulty, and keep the rolls always clear and in working condition.

In Fig. 1 of the drawing, A is the top roll, covered with fine smooth leather, and B is the

under roll of steel, the surface of which is cut into sharp longitudinal ridges to effect a bite on the fibrous roving, which passes between it and the yielding surface of the top roll, as shown in Fig. 2. Heretofore a brush-clearer, G, has always been applied beneath the under metallic roller B, as shown in Fig. 1, and a cloth-clearer, D, Fig. 4, stretched between two staples, S, in a suitable block, H, has generally been applied to the top rolls in the manner shown in Fig. 2, the surface of the cloth D between the staples resting on the three top rolls A A¹ A², and pressing down with the weight of the block H. But in my improved top-roll clearer I provide one or more rows of bristles, *b*, and one or more strips of coarse woolen or other fibrous fabric, as shown at *c* in Fig. 5. If three sets of drawing-rolls be used, good results may be attained by having the front top roll only guarded by rows of bristles, but very similar results will accrue if the front top roll and the next in rear be so guarded, for in both cases the long loose fibers will be thereby kept from wrapping on the rolls. It is not, however, only such long fibers that interfere with the proper operation of the drawing-rolls, for although it has been many years since brush-top roll-clearers have been proposed, they have never, to my knowledge, been generally adopted. The fine fibrous dust incident to drawing is equally objectionable, and the leather surface of the top roll should be practically free therefrom, and in every way kept as clean and smooth as possible. This fibrous dust is not practically removed by the bristles which, to operate well, must be quite strong and stiff, and therefore the woolen cloth-clearers have been for many years almost exclusively employed in this connection. When frequently lifted and stripped or cleaned, these cloth-clearers serve a good purpose, but in practice the long loose fibers become packed at the points of contact between roll and clearer, tending to force the clearer upward at the front edge, and if not promptly observed and corrected by stripping or cleaning bad drawing will inevitably result. In my improved clearer, I combine the bristles with the woolen cloth, placing the bristles in front to serve as the main clearers for removing the long loose fibers, and the

cloth in the rear for guarding against and removing the fibrous dust, and by that means I effectually secure thoroughly clean top rolls.

It is well-known that the rear rolls are somewhat less liable to be wrapped with long fiber than the front roll, owing to the fact that the bite of two sets of rolls in drawing controls, in a great measure, the long fibers. Incident to the drawing operation, however, there is much fibrous dust which adheres to the rolls, and this is fully removed by the cloth. After the sliver leaves the bite at the front rolls, however, it is less under control, and hence there is more liability of long fibers being wound upon the front roll than the rear ones, and these long fibers are more completely controlled by the brushes than is possible with the cloth-clearers.

My improved top-roll clearers, in practice,

require stripping not more than half as often as those composed wholly of cloth. In order to provide for ready renewal of the brushes, whenever they become unduly worn, I set the tufts of bristles in narrow wooden strips, as at *a*, and insert them into grooves in the clearer-block fitted to receive them, and secure them therein by one or more screws.

I desire it to be distinctly understood that I make no separate claim to either the brush-clearer nor the cloth-clearer; but I do claim as new, and desire to secure by Letters Patent—

A top-roll clearer clad partially with bristles and partially with cloth, the two being arranged substantially as described.

JAMES T. HARRIS.

Witnesses:

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