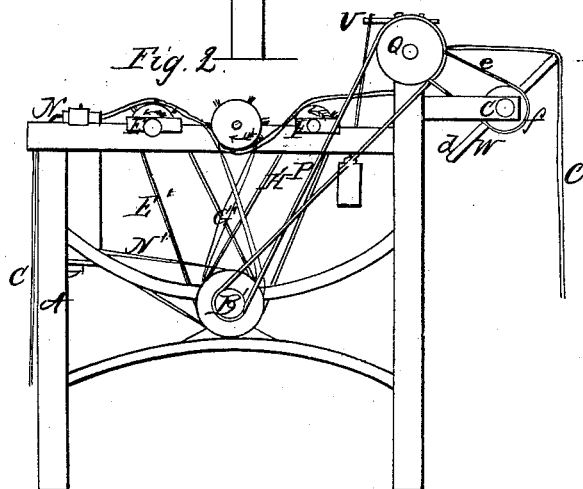
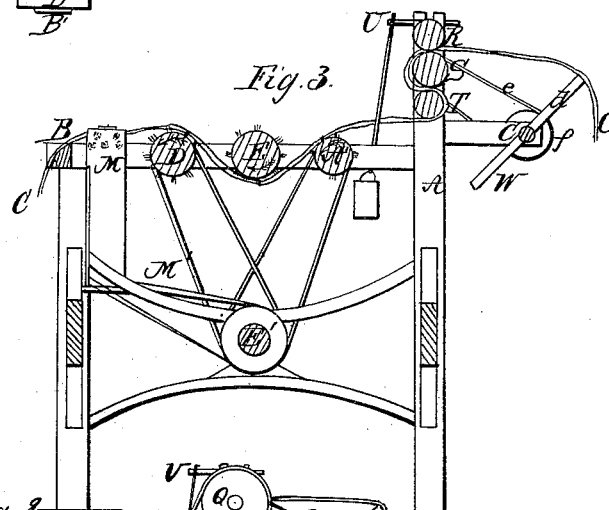
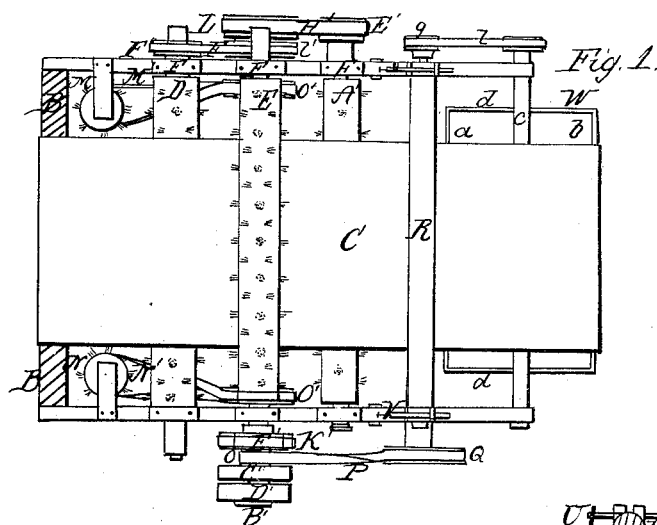


J. & H. H. Higgins.
Cleaning Surface of Cotton Cloth.
N^o 6,152. Patented Mar. 10, 1849.



UNITED STATES PATENT OFFICE.

JOHN HIGGINS AND H. H. HIGGINS, OF EAST GREENWICH, RHODE ISLAND.

MACHINERY FOR DRESSING AND FOLDING CLOTH.

Specification of Letters Patent No. 6,152, dated March 10, 1849.

To all whom it may concern:

Be it known that we, JOHN HIGGINS and HIRAM H. HIGGINS, of East Greenwich, in the county of Kent and State of Rhode Island, have invented a new and useful Machine for Trimming the Surface of Cotton Cloth of the Threads or Parts Usually removed by Hand or other Means, and Smoothing the Same; and we do hereby declare that the same is fully described and represented in the following specification, and accompanying drawings, letters, figures, and references thereof.

Of said drawings, Figure 1, denotes a top view of our said machine. Fig. 2, is a side elevation of it. Fig. 3, is a central vertical and longitudinal section of it.

In said figures A, exhibits the framework which supports the operative parts of the machine. At one end of it, and extending across it, is a lateral stretching, or tension bar B, whose upper surface, over which the piece of cloth C, is made to pass is scored or grooved in opposite directions as seen in Fig. 1. D, E, and A', are three cylindrical shaped brushes arranged parallel to one another and having the journals of their axes supported in boxes or bearings E, F, &c., disposed and fixed on the top or upper part of the frame as seen in Fig. 1. Below the middle one of said brushes is a driving shaft B', upon one end of which is a fast pulley C', and a loose pulley D', the belt which gives motion to the machinery being applied upon either of them as circumstances may require. On each shaft of each brush is a pulley E', around which an endless belt F', G', or H', extends, said belt being also made to work on one of three pulleys, I', K', L', fixed upon the driving shaft, as seen in the drawings.

On the driving shaft is a small pulley O. There are also two vertical cylindrical brushes M, N, placed as seen in the drawings, and rotated respectively by endless belts M', N', which work around their cylinders and pulleys O' O' fixed on the driving shaft. The said vertical brushes are for the purpose of operating on the selvage or edges of the cloth. From said small pulley O, an endless belt P, leads to and around another pulley Q, fixed on the axis or shaft of the middle roller S, of a series R, S, T, of draw rollers arranged in front of the revolving brushes as seen in the drawings. The two upper draw rollers are forced

downward toward the lower one by two weighted levers U, V, made to rest upon the journals of the roller R.

In front of the draw rollers is a folding reel or folder W. It is composed of two bars a, b, arranged parallel to one another, and to a horizontal shaft c, there being one of said bars on each side of the said shaft, and each being kept in position by being fastened to a suitable number of arms d, d, &c. extending from and at right angles to the shaft. The said folder is revolved by an endless belt e, which passes around a pulley f, fixed on the shaft of the folder, and another pulley g, fixed on the shaft of the middle draw roller.

The cloth P', to be trimmed of the projecting threads and loose ends of filling or warps, is passed into the machine by being led over and upon the stretching bar B. From there it is carried over and in contact with the brush D. Thence it is carried downward between that and the next brush, and under and in contact with the second brush, and thence upward between the second and third brushes. Thence it passes to and under the lower draw roller; thence upward partially around the same, and between it and the middle draw roller; thence upward and partially around the middle draw roller, and between it and the upper draw roller; from thence it is carried over and upon the folder, and suffered to hang downward upon the ground. All as seen in Fig. 3.

The cylindrical brushes are each to be put in very rapid revolution; that is with a velocity of about 2000 to 3000 turns per minute. The two exterior horizontal brushes will act on the under surface of the cloth, while the middle horizontal brush at the same time will operate on the upper surface of it. The brushes are to be made to revolve in directions contrary to that in which the web of cloth is drawn forward by the draw rollers, the said directions being denoted by arrows in Fig. 3. The folder by its revolutions will cause the cloth as it passes out of the machine to be laid in folds on the floor.

We are aware that a revolving brush has been employed to clean the surface of cloth or elevate the nap thereof for the purpose of shearing the same. We do not consider such as making any part of our invention; for such brushes are never used or revolved

with rapidity sufficient to cut off or remove all or any essential portion of the loose threads or ends which it has heretofore been customary to remove by hand aided by a
5 knife, scissors, or other instrument.

The peculiar manner in which the brushes are made to operate, that is in directions opposite to that in which the cloth is moved through the machine, causes the loose
10 threads of warp or filling to be seized and combed or brushed out and cut down to the surface of the cloth; whereas were the brushes made to revolve in an opposite direction, they would not operate to so good
15 advantage.

We lay no claim to the mere use of a revolving brush, but

That which we do claim is—

1. Theaforedescribed new organization of
20 horizontal and vertical cylindrical brushes,

and a set of draw rollers, as arranged, combined, and operating together, substantially, in manner, and for the peculiar purpose as above designated.

2. We also claim, the revolving cylindrical
25 brushes, (either with or without the vertical brushes,) the set or system of draw rollers, and the folder or folding apparatus, in combination with one another, and as arranged and operating together substantially, in
30 manner and for the purpose as hereinbefore explained.

In testimony whereof we have hereto set our signatures this thirteenth day of December A. D. 1847.

JOHN HIGGINS.
HIRAM H. HIGGINS.

Witnesses:

RUSSELL VAUGHN,
BENJ. COSENS.