J. K. PROCTOR.

Wool-Burring Machine.

No. 208,493. Patented Oct. 1, 1878.

Fig. 2

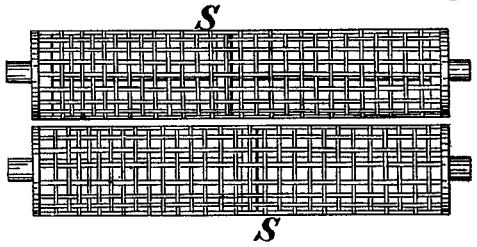

Fig. 1

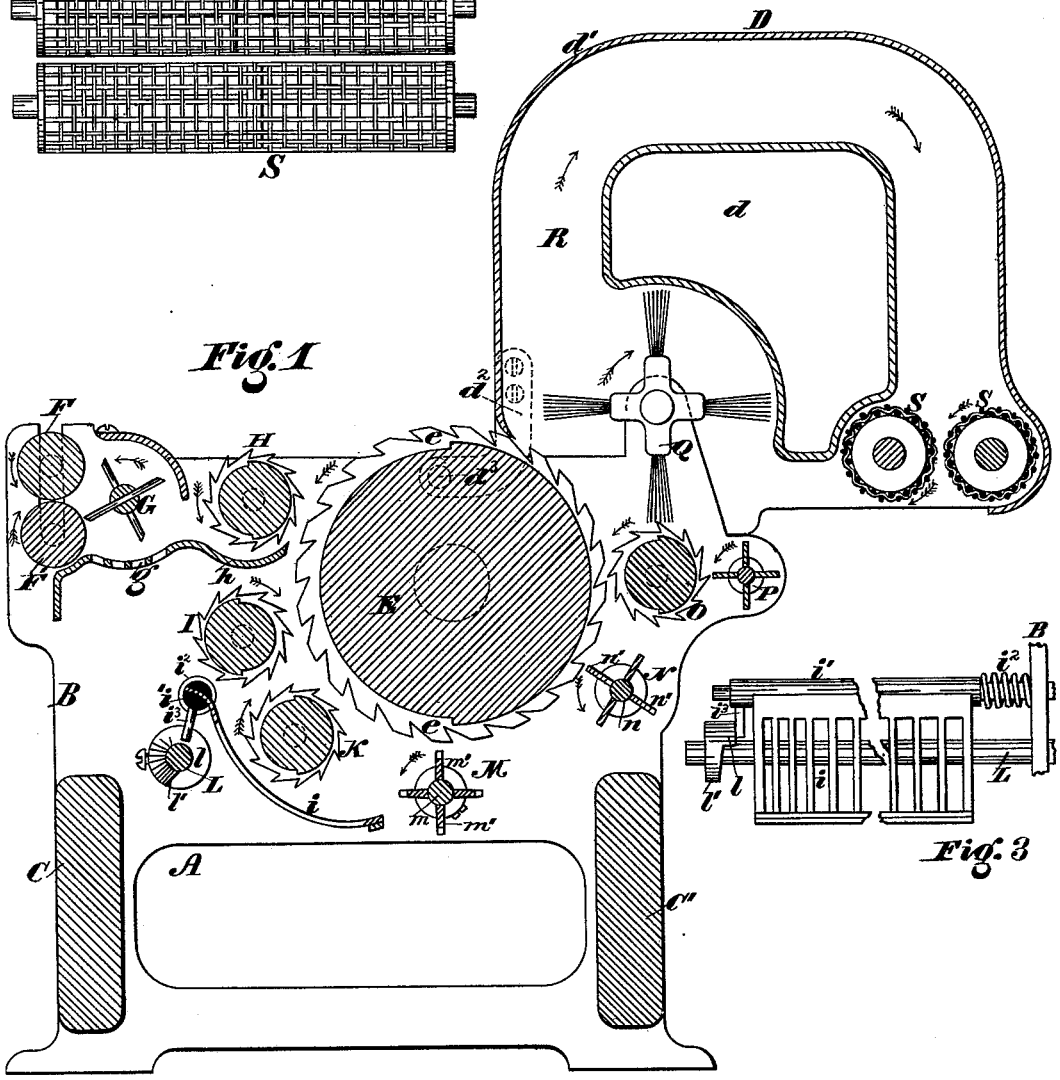

Fig. 3

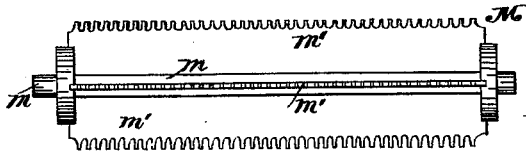

Fig. 4

WITNESSES:

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UNITED STATES PATENT OFFICE.

JOSIAH K. PROCTOR, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO PHILADELPHIA BURRING MACHINE WORKS, OF SAME PLACE.

IMPROVEMENT IN WOOL-BURRING MACHINES.

Specification forming part of Letters Patent No. **208,493**, dated October 1, 1878; application filed October 24, 1877.

To all whom it may concern:

Be it known that I, JOSIAH K. PROCTOR, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Wool-Burring Machines; and I do hereby 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a vertical longitudinal section of my invention. Figs. 2, 3, and 4 are, respectively, detail views of the condensing-cylinders, movable grating, and toothed beater.

My invention has for its object to provide an improved machine for burring wool; and my improvements consist in the peculiar construction, combination, and arrangement of parts hereinafter more fully set forth and claimed.

Referring to the accompanying drawing, A represents the frame of the machine, consisting of two ends, B B, connected front and back by bars C and C′, respectively. D is a supplemental frame, composed of ends d d, united by a curved sheet-metal top, d^1, and hinged to the ends B B by L-shaped arms d^2, which swing on pivots d^3. E is the main cylinder, which is clothed with wire or rings, having burring-teeth e of the usual form. F F′ are feed-rollers, and G a beater sustained over a grating, g, these parts being of the usual construction. H is a shell feed roll or cylinder, clothed like the main cylinder E, but having finer teeth than the latter, and h is the shell beneath it. I and K are transferring rolls or cylinders, clothed with toothing like the roll H, and moving above a grating or screen, i. Said screen or grating is caused to move from side to side or laterally by the following means: It is fastened and finds its only support on a shaft, i^1, sustained in the ends B B, and having liberty of motion in said ends in the direction of its length. Upon one end of said shaft, between the adjacent end B and the edge of the grating, is a spiral spring, i^2, and from the other end projects a radial arm, i^3. L is another shaft, having a cam, l, against which the arm i^3 presses. When the shaft L revolves, the cam l causes the shaft i^1 to be moved longitudinally in one direction, the spring i^2 producing a reaction or return as soon as the arm i^3 passes the shoulder l' of the cam l. M and N are beaters, consisting of cylinders m and n, having radial blades m' n'. The beater N is nearer to the main cylinder E than the beater M is, the blades of the former having straight edges, while those of the latter are serrated. O is a cylinder having fine toothing, the points of the teeth on said cylinder being brought as close as possible to the points of the teeth on the main cylinder E, yet without touching or intersecting the latter. P is a beater for the cylinder or roll O, and Q is a brush which sweeps against both the main cylinder E and opening-cylinder O. R is a trunk or conduit leading from the brush Q to condensing-rolls S S.

The operation is substantially as follows: The wool containing burrs is fed in by the rolls F F′, and beaten by the beater G, the impurities there removed falling through the grating g. From the beater the fiber passes to the shell feed-roll, which carries it to the main cylinder E. The main cylinder moving forwardly in the direction of the arrow at a high rate of speed, while the roll H moves backwardly, as indicated by the arrow, at a low rate of speed, a carding action takes place against the teeth of said roll. The fiber is also carded against the edge of the shell h by the main cylinder E. The fiber is taken from the roll H and shell h by the main cylinder E and carried downwardly until the beater M is met. Here any burrs or lumps of wool projecting from the cylinder E are struck by said beater M, and thereby thrown upon the grating i. The roll K at once seizes the fiber thus thrown upon the grating and carries it around in the direction of the roll I, the latter taking hold of such fiber as projects beyond the points of the teeth of said roll K. The burrs and other impurities freed from the fiber pass down through the grating i, the latter being prevented from choking up by reason of the shaking motion communicated to it, as already described. The fiber taken by the rolls I and K is transferred back to the main cylinder E, the

suction, centripetal, and electrical forces of the latter, due to its high rate of speed, effecting such transfer. The fiber thus transferred, together with what passed the beater M without being knocked off by the latter, is carried by the cylinder E toward the beater N. Here such burrs and lumps as may have passed the beater M are knocked off and permitted to drop to the floor, or, if desired, upon another grating like *i*, to be acted upon by transferring-rolls similar to I and K. The fiber carried past the beater N is removed as follows: Such of it as projects above the surface of the teeth *e* is drawn off by the cylinder O and opened, any burrs or other impurities therein being removed by the beater P. The fiber below the surface of the teeth *e*, as well as that on the cylinder O, is removed by the brush Q and blown or thrown thereby through the trunk or conduit R to the rolls S S, which condense said fiber and deliver it in a matted form to another machine.

If desired, the condensing-rolls may be dispensed with, and the fiber blown out from the trunk R or direct from the brush Q in a loose condition.

The various rolls, cylinders, and beaters described should be geared by any suitable means, which I do not deem it necessary to illustrate, to run relatively as follows: The main cylinder, say, five times as fast as the cylinders H I K, and at or about the same rate as the opening-cylinder O; the beaters M, N, and P, say, five times as fast as the cylinders against which they work, and the feed-rolls F F′, beater G, brush Q, and condensing-rolls S S at about the speed usually employed in machines of this or a like character.

The roller I may be dispensed with, and the roller K used alone, in connection with the beater M, main cylinder E, and grating *i*.

What I claim as my invention is—

1. The combination of the burring main cylinder E, transferring-roll K or rolls I K, arranged and adapted to return the fiber to the former grating or screen *i*, beaters M N, and opening-cylinder O, arranged and operating substantially as shown and described.

2. The combination of main cylinder E with a feed-roller, H, beaters M and N, opening-cylinder O, and brush Q, arranged and operating substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 19th day of October, 1877.

JOSIAH K. PROCTOR.

Witnesses:
M. DANL. CONNOLLY,
CHAS. F. VAN HORN.