

S. METCALFE.
Wool-Combing Machine.

No. 218,823.

Patented Aug. 26, 1879.

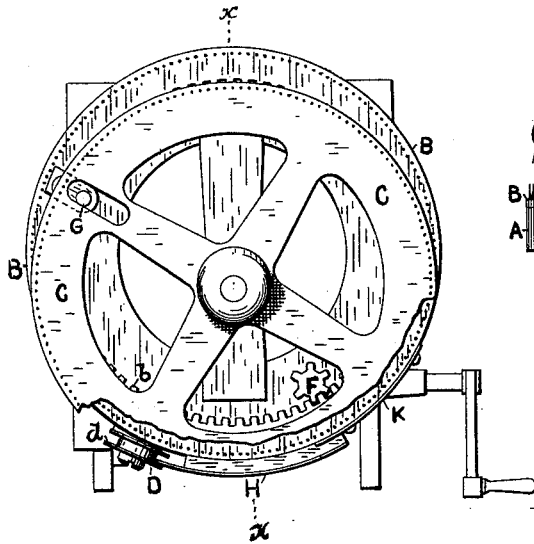


FIG. 1.

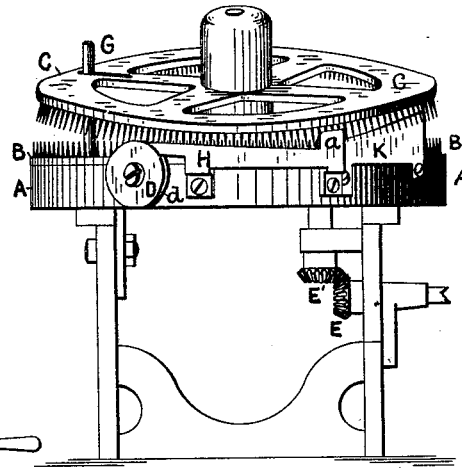


FIG. 2.

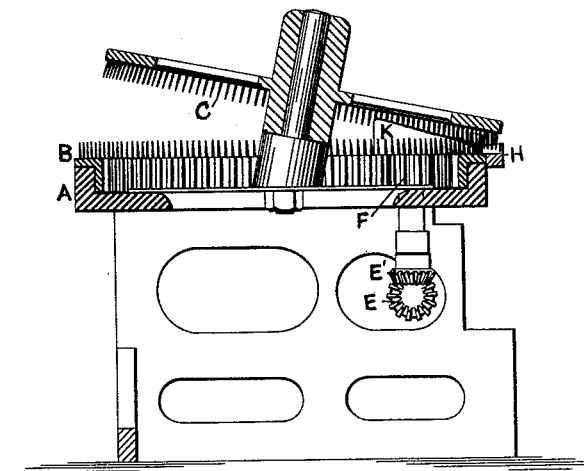


FIG. 3.

WITNESSES.

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SAMUEL METCALFE, OF POQUONOCK, ASSIGNOR TO AUSTIN C. DUNHAM
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IMPROVEMENT IN WOOL-COMBING MACHINES.

Specification forming part of Letters Patent No. **218,823**, dated August 26, 1879; application filed
October 22, 1878.

To all whom it may concern:

Be it known that I, SAMUEL METCALFE, of Poquonock, in the town of Windsor, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Wool-Combing Machines; and I do hereby declare that the following specification, taken in connection with the accompanying drawings, forming a part of the same, is a full, clear, and exact description thereof.

The improvements hereinafter described are applicable to my improved wool-combing machine for which Letters Patent of the United States No. 198,950 were granted January 8, 1878.

The said machines employ the well-known toothed annulus of the "Lister wool-comber" and an inclined gill-comb, whose teeth are parallel to those of the lower comb when adjacent to the drawing-off mechanism, and at such point move in the same plane as the teeth of the lower comb, whereby the butts of the wool, as it is drawn off, are simultaneously operated upon by the teeth of both combs and more thoroughly combed than in former machines.

In the patent above referred to the machine is also furnished with a lifter-wheel, placed outside the lower comb, and so arranged with reference to the teeth of the upper or gill comb that said teeth pass through the groove in the periphery of said wheel, whose office is to support the outlying ends of the wool carried over it, and to lift the said wool into the teeth of the gill-comb without disengaging it from the teeth of the lower comb.

Referring to the drawings, Figure 1 represents a plan of a wool-combing machine furnished with my improvements. Fig. 2 shows a front elevation of the same, and Fig. 3 a vertical section on line *x x*.

As shown in all the figures, A represents the bed, which is usually hollow, so that it may be heated by steam, and upon which is mounted the lower comb, B. The upper or gill comb, C, is inclined and arranged above the lower comb, its teeth passing through the annular groove *d* in the lifter-wheel D. Motion is communicated to the lower comb by means of the gears E E' F, the latter meshing with the toothed

interior periphery, *b*, of the said comb, and to the upper comb, C, by means of the stud G, secured to the lower comb and passing through a slot, *e*, in the upper comb. H shows the plate, arranged outside the teeth of the gill-comb C, and K the plate between the teeth of the two combs.

As above described, the office of the lifter-wheel D is to raise the wool so that it can be acted upon by the teeth of the gill-comb C. This lifter-wheel, by reason of its continuous rotation in one direction, performs the lifting operation and co-operates with the adjacent plate in a better manner than the reciprocating lifter shown in my Letters Patent No. 185,772, dated December 26, 1876.

It is necessary to the perfect combing of the wool, however, that it be supported after passing from the wheel, or such other lifting device as may be substituted for the wheel, into the gill-comb, to prevent it from falling below the points of the teeth of said comb, and thereby being improperly operated upon. To accomplish this is one office of the plate H, which is so arranged relatively to the wheel D and comb C that it receives and supports the wool while being drawn off by any suitable drawing-off mechanism in the same horizontal plane in which it is delivered from the wheel. This plate H is placed in close proximity to the teeth of the comb C and concentric therewith, and thereby performs a second office of supporting the teeth and preventing them from being bent by the pulling upon them of the wool staple when drawn off by the fluted rollers of the drawing-off mechanism of the usual character, as illustrated in my prior Letters Patent. Again, from the fact that the rollers of the drawing-off mechanism are immediately adjacent to the said teeth, the plate also prevents the teeth from being injured by contact with the said rollers.

It will be observed that the plate H has an elevated section, *a*, having an abrupt face, which is at right angles, or substantially so, with the horizontal edge of the plate. The purpose of this offset is to arrest the movement of the wool at that point and contribute to its more perfect delivery to the rolls.

In machines employing two annular combs, arranged as hereinbefore described, it has been customary heretofore to force the "noils" from the upper comb into the lower by means of an eccentric movement and brush, or equivalent devices, and then by a similar movement to strip the said noils from the lower comb, thus requiring a double operation. Now, the object of the plate K, which is a fixture attached to the stationary bed A, and has its upper edge inclined, and is located between the paths of the two combs, is to simplify the operation of removing the noils from the combs, thereby creating a saving of power, and this it does by dispensing with the mechanical operations heretofore employed for removing the noils from one comb to the other by arranging the said plate concentric with the lower comb-teeth and with the foot of its inclined edge, commencing at about the point where the path of revolution of the inclined upper comb-teeth begins to diverge from the path of revolution of the lower comb-teeth, so that the noils will pass over its gradually-rising face and into the upper comb, from which they can be removed in the usual manner.

The advantages derived from the use of my improvements are, therefore, a more perfect combing of the wool and simplicity in removing the noils from the combs.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of the annular revolving combs, as described, and a plate arranged between the paths of the teeth of the two combs, having an inclined face to lift the noils from the lower into the upper comb, substantially as described.

2. The combination of the annular revolving combs, as described, a protector-plate arranged concentrically with the upper gill-comb, having an elevated section with an abrupt face, and a plate arranged between the paths of the teeth of the two combs, and having an inclined face to lift the noils from the lower into the upper comb, substantially as described.

SAMUEL METCALFE.

Witnesses:

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