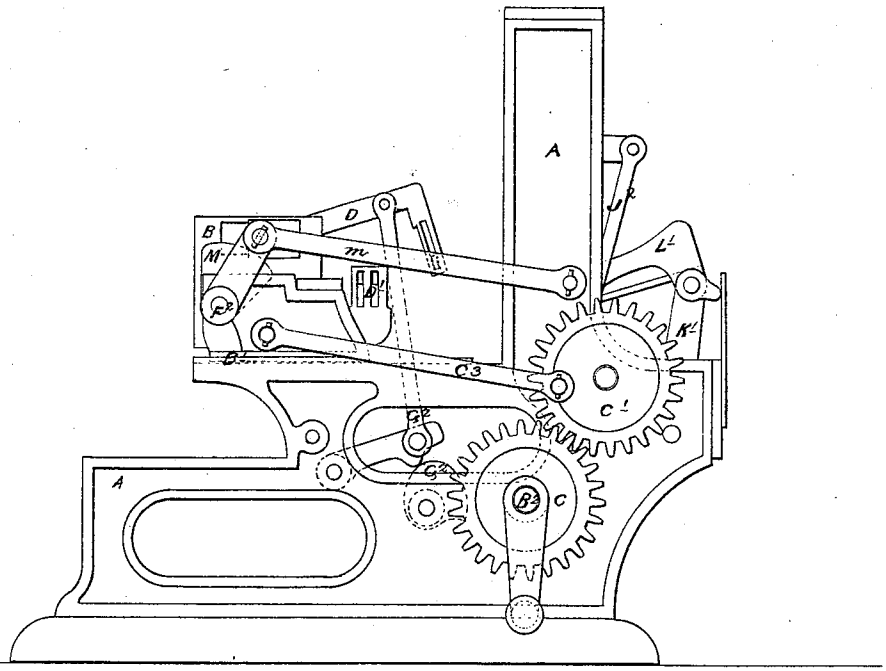
5 Sheets--Sheet 1.

M. MIRFIELD & J. SCOTT.

Combing-Machines.

No. 150,073. Patented April 21, 1874.

FIG. 1.



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M. MIRFIELD & J. SCOTT. 5 Sheets--Sheet 2.

Combing-Machines.

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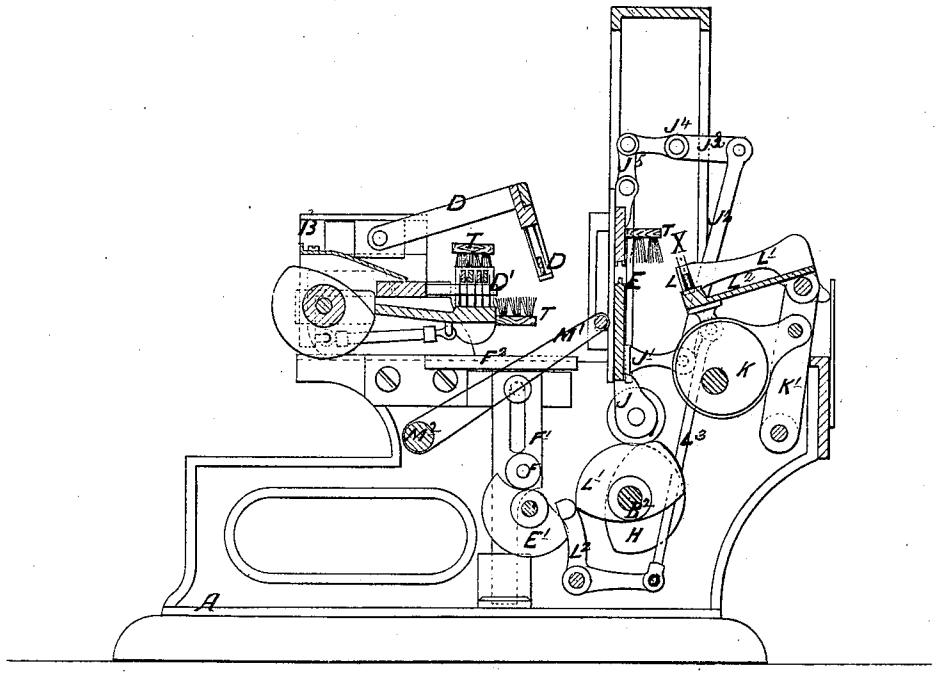
FIG. 2.



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M. MIRFIELD & J. SCOTT. 5 Sheets--Sheet 3.

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FIG. 3

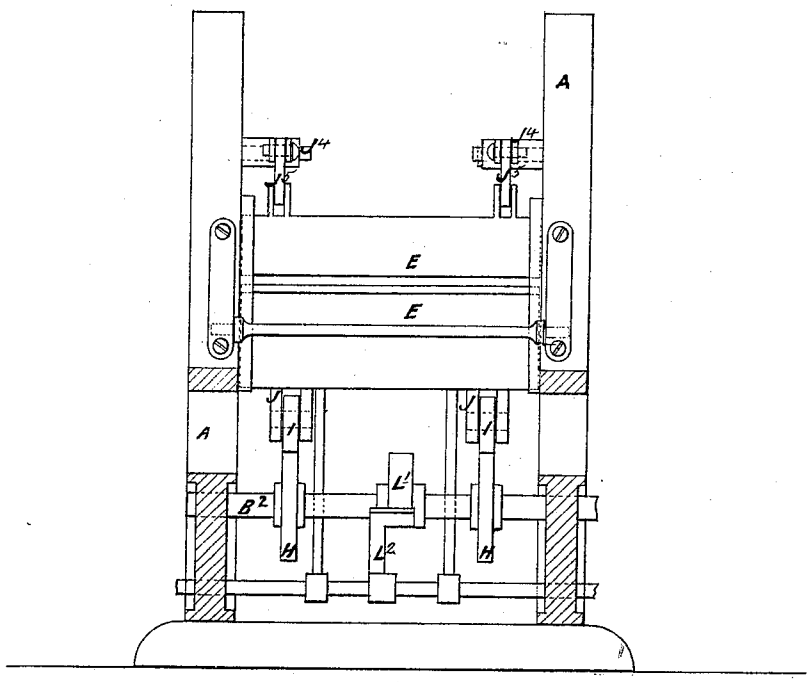

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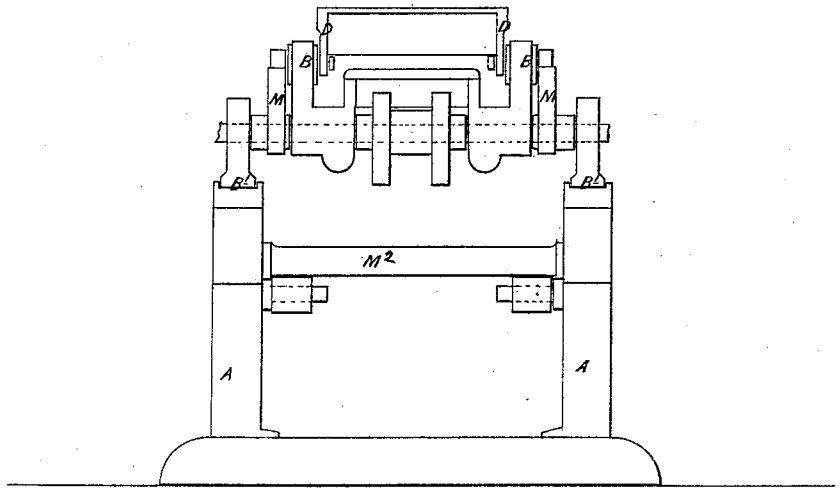
FIG 4.



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5 Sheets--Sheet 5.

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Combing-Machines.

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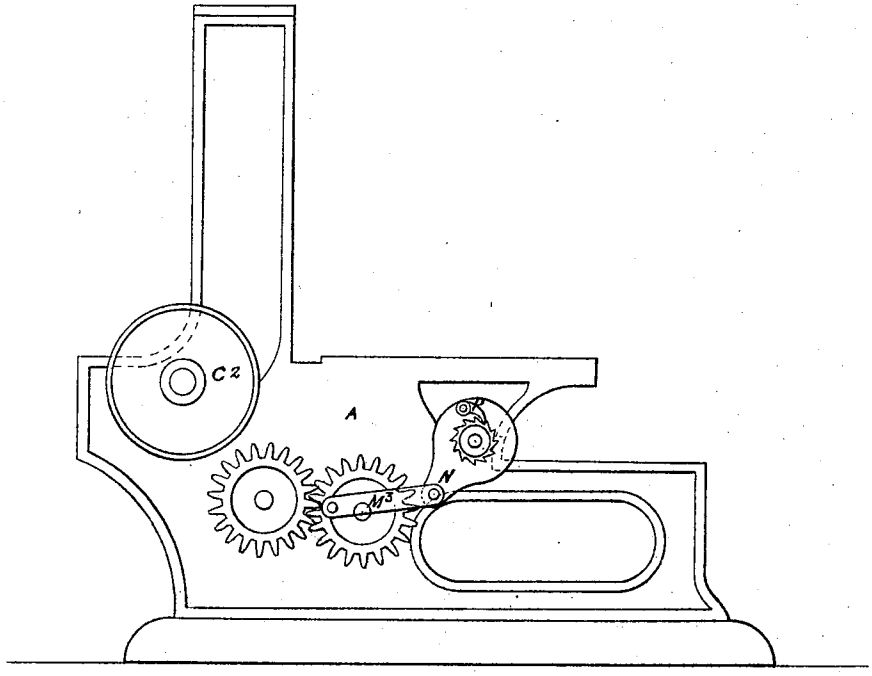
FIG 5.



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UNITED STATES PATENT OFFICE.

MATTHEW MIRFIELD AND JOHN SCOTT, OF MONTSERRAT MILLS, HOLME LANE, NEAR BRADFORD, ENGLAND.

IMPROVEMENT IN COMBING-MACHINES.

Specification forming part of Letters Patent No. 150,073, dated April 21, 1874; application filed March 1, 1873.

To all whom it may concern:

Be it known that we, MATTHEW MIRFIELD, of Montserrat Mills, Holme Lane, near Bradford, in the county of York and Kingdom of England, worsted-top maker, and JOHN SCOTT, of the same place, overlooker, have invented certain Improvements in Machinery or Apparatus for Preparing Wool or other Fibrous Substances for Combing or Spinning, of which the following is a specification:

This invention relates to machinery for combing wool and other fibers; and consists in the employment of a feeding-head and combs, whereby the wool to be combed is advanced and introduced to a pair of nipping-jaws, whereon the combs, of which there are two—one an under comb, and the other an over or intersecting comb—pierce the fiber and recede, the under comb in advance of and to a greater distance than the over comb, so as to comb and clear or free from noil not only the tuft or length of staple detached from the body of wool, but also that portion which will, on the next forward movement of the feeding-head, be deposited between the nipping-jaws. An oscillating comb applied at the other side of the said nipping-jaws is passed through the noil end of the fiber, so as to remove the noil therefrom, whereon the nipping-jaws are opened, and the combed tuft of wool is released and received on an endless traveling apron, and thereby conveyed to a gill-box to be again formed into a sliver. The noil is removed from the teeth of the noil-comb by means of a grate or bar raised between the teeth, so as to push out the noil from between the teeth and deposit it on a like traveling apron, by which it is carried away.

The following is a full and complete specification of this invention, reference being had to the drawings accompanying the same.

Figure 1 is a side elevation. Fig. 2 is a longitudinal section. Fig. 3 is a cross-section. Fig. 4 is a front view. Fig. 5 is a side elevation.

Similar letters refer to the same parts in the various views or figures.

A A are the side frames, which carry the feeding-head B, working in the slides B^1 B^1. On motion being imparted to the shaft B^2 by ordinary driving-pulley, the wheels C C^1 and disk C^2 will, by means of the connecting-rods C^3, advance or slide the head B and the combs D and D′ close to the nipping-jaws E, thereby conveying to and inserting within or between the said nipping-jaws a portion of the wool to be operated upon. The wheels C and C^1 will now, by rotating the shaft B^2, have brought into operation the tappets E′, which, acting on the friction-bowl F, attached to the uprights F^1, will raise or lift the bed F^2, by which the lower comb D′ is operated, causing the same to pierce the fiber, while at the same time the intersecting comb D descends and pierces the fiber from above. The nipping-jaws E will have been closed by the action of the tappets H H on the shaft B^2 acting on the anti-friction bowls I, attached to the connections J J, and so have raised the lower of the nipping-jaws. The lugs J^1 will, through the connecting-rods J^2, turn the levers J^3 J^3 on their fulcrums J^4, and said levers will, by the connections J^5 J^5, depress and close the upper nipping-jaw, and so the wool will be securely held. Meanwhile the eccentric K on the shaft of the wheel C^1 will, by means of the rocking arm K′, have brought the oscillating noil-comb L close to the nipping-jaws. The tappet L^1 on the shaft B^2 will act on the bell-crank lever L^2, raising, by means of the connecting-rod L^3, the oscillating noil-comb L, the teeth of which pierce the protruding fiber ready to remove the noil therefrom. The connecting-rods C^3 will now cause the head B and comb D′ to recede, the comb D being retarded or caused to dwell (by means of the tappets M and rod *m*, the former acting on anti-friction bowls on the side of the comb D) until the comb D′ shall have been passed a distance through the wool beyond the detaching or severance point, and so a portion of the wool next to be deposited between the nipping-jaws shall have been cleared or freed from noil. Meanwhile the eccentric K and rocking arm K′ have traversed the oscillating comb L through the end of the fiber and removed the noil therefrom. The tappets H H are now passing over their throw or lift and the nipping-jaws are open, and the combed

tuft of wool is deposited on the traveling endless apron M^1, actuated by the shaft or roller M^2. The roller M^2 is operated intermittingly by means of the connecting-rod M^3 and crank N, the latter being loose on the roller end, so that the catch P only engages with the catch-wheel P′ during one portion of the revolution of the wheel, and so imparts to the cloth-roller an intermittent partial revolution, whereby the wool is conveyed to a gill-box to be reformed into a sliver. The noil has been removed from between the teeth of the oscillating comb L by means of the bar X (supported by the arms L^1) and deposited on the receiving board or table L^2.

Preparatory to the feeding-head B and combs D′ and D making another forward movement to deposit more fiber between the nipping-jaws to be combed, bed F^2, on which the said combs D′ and D receded, will, by reason of gravitation and the turning of the tappets E′ to their concentric part, be lowered, and so the teeth of the comb D′ will be withdrawn from the fiber and within the grating, so that the fiber may pass from the feeding-head to the nipping-jaws ready to repeat the operation above described, the comb D being withdrawn by the tappet and connecting-rod G^2.

At T are shown the dabbing-brushes for preventing the fiber being displaced when the teeth of the combs are being introduced.

We claim—

The combs D D′, in combination with the tappet M, operating to retard the motion of the comb D as the two recede, substantially as described.

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Witnesses:

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DANIEL SHARP,
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