Dec. 8, 1925. 1,564,600

H. MALY

METHOD OF CARDING TEXTILE FIBERS AND APPARATUS THEREFOR

Filed July 17, 1923 2 Sheets-Sheet 1

Fig. 1.

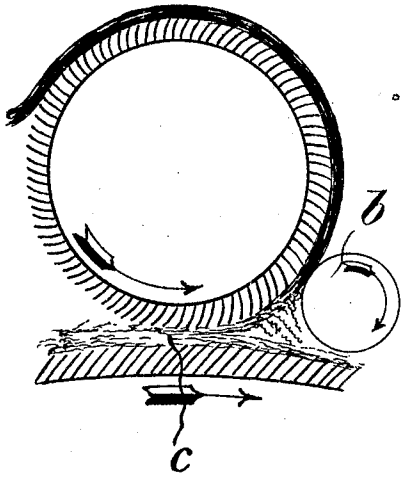
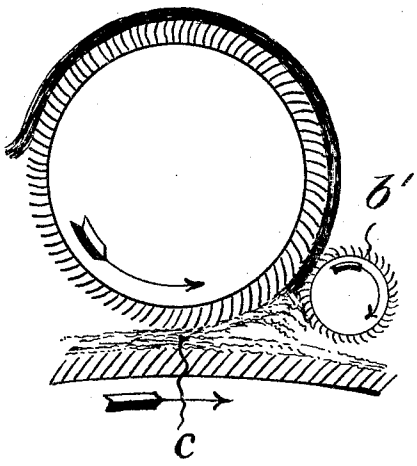


Fig. 2.



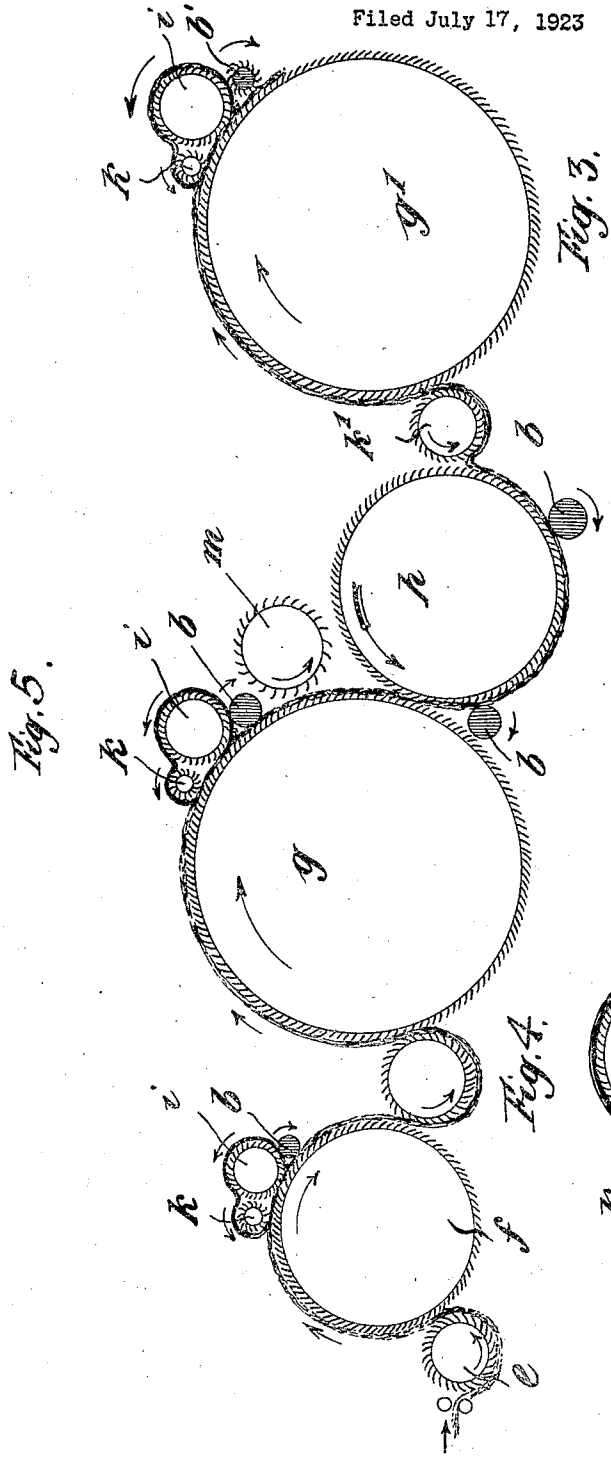
Inventor:
Hermann Maly
By: Knight Bros
Attys.

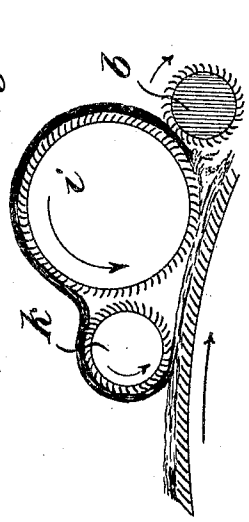
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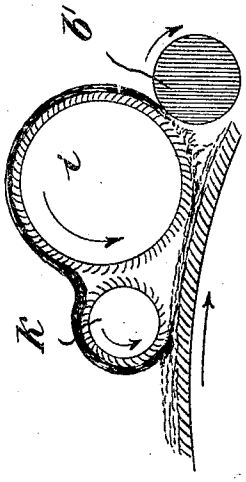
H. MALY

METHOD OF CARDING TEXTILE FIBERS AND APPARATUS THEREFOR

Filed July 17, 1923 2 Sheets-Sheet 2







Inventor:
Hermann Maly
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UNITED STATES PATENT OFFICE.

HERMANN MALY, OF GUBEN, GERMANY.

METHOD OF CARDING TEXTILE FIBERS AND APPARATUS THEREFOR.

Application filed July 17, 1923. Serial No. 652,134.

To all whom it may concern:

Be it known that I, HERMANN MALY, subject of the German Republic, residing at Guben, Germany, Haagstrasse 15, have invented certain new and useful Improvements in Methods of Carding Textile Fibers and Apparatus Therefor, of which the following is a specification.

A common defect of the carding machines (commonly called carding engines) hitherto used, arises from the fact that the worker rollers operating in conjunction with the main cylinder do not receive the fibers in a smooth, more or less uniformly directed state, but in a rough, tangled condition, many of the fibers being bent backwards, and the rollers deliver the fiber in this state. This circumstance, which has generally been regarded as inevitable, arises from the fact that the co-acting cards both tend to retain the fibers, in view of the direction of their rotation and teeth, whereas for smoothing out the fleece or slivers, the cards must move in the same direction, though at different speeds. The rough fibers are returned to the cylinder by the strippers or clearers in a condition which may be said to be just the opposite of that which is desirable from the point of view of obtaining a smooth fleece or sliver. The very short working period, usually 1/900 to 1/600 second per centimeter of fiber, available for coaction of the workers with the cylinder is insufficient for adequately smoothing out the fibers and laying them parallel. In fact there occurs a compression and tangling of the fibers which produces a bunch from which the fibers must be forcibly drawn as the cards move apart, and the fibers are thus apt to be broken. In fact a certain roughness and prevalence of minute knots which were not originally present can frequently be observed in the material after it has passed through the carding machine.

The defect referred to is less marked where flats are used in place of band or fillet cards, in proportion as intervals occur between the flats, where the injurious action does not occur.

The object of my invention is to remove the defect described.

To this end I arrange that the tangled roughened and partly reversed fibers issuing from the zone between the cylinder and worker are smoothed out and laid parallel, and pressed against the teeth of the worker, by a condensing roller or rollers whose surface velocity is greater than that of the worker. The smooth, condensed layer of fiber is returned to the cylinder in a much better condition for continuance of the carding process, because the tangling and tearing action between the worker and main cylinder is avoided. The result is that the fiber is delivered in a much better state to the last doffer and comb, and a substantial improvement in the quality of the textile product is obtained. In the drawings:

Figs. 1 and 2 are detail views, each showing a portion of a main cylinder with a worker and condensing roller according to my invention.

Figs. 3 and 4 are detail views, each showing a portion of a main cylinder with a worker, stripper and condensing roller, while

Fig. 5 shows a complete series of carding elements.

Referring to Fig. 3 and Figs. 4 and 5, e is the licker-in and f the swift or breaker-card; g, g^1, are the main cylinders, h a doffer, i the workers, k the strippers or clearers, k^1 the angle strippers, b or b' the condensing rollers, and m the fancies.

As shown in Figs. 1, 4 and 5 the condensing rollers b may be smooth, but as shown in Figs. 2 and 3, and also at the right of Fig. 5, they may have teeth. In the latter case the teeth must point in the opposite direction to those of the workers.

There may be more than one condensing roller associated with one worker.

The following surface velocities have been found to give good results:

	M. per min.
Main cylinder	330
Worker	10
Stripper	100
Doffer	12
Angle strippers	20
Condensing rollers	20

However the velocities used must, of course, depend largely on the nature of the work and other conditions, and the above values are given only as a typical example.

What I claim is:

1. Method of improving the product of carding engines consisting in smoothing and condensing the fibers adhering to a working roller prior to the removal of the fibers from said roller.

2. Method of improving the product of carding engines consisting in smoothing and condensing the fibers adhering to a working roller without interrupting the course of the fibers thereon.

3. In a carding engine, a condensing roller cooperating with a working roller for smoothing and condensing the fibers on the working roller without interrupting their course thereon.

4. In a carding engine, a condensing roller cooperating with a working roller for smoothing and condensing the fibers on the working roller without interrupting their course thereon, said condensing roller rotating in an opposite direction to and having a greater peripheral speed than said working roller.

The foregoing specification signed at Berlin, Germany, this 18th day of June, 1923.

HERMANN MALY.