

UNITED STATES PATENT OFFICE.

PETER LUDWIG KLEIN, OF DUSSELDORF, PRUSSIA, GERMANY.

METHOD OF PREPARING WOOL FOR SPINNING.

SPECIFICATION forming part of Letters Patent No. 357,486, dated February 8, 1887.

Application filed January 30, 1886. Serial No. 190,367. (No specimens.) Patented in France December 8, 1884, No. 163,461; in Belgium November 30, 1885, No. 70,800, and in England June 18, 1886, No. 1,584.

To all whom it may concern:

Be it known that I, PETER LUDWIG KLEIN, of Dusseldorf, in the Kingdom of Prussia and Empire of Germany, have invented a new and
5 Improved Method of Preparing Wool for Spinning; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to
10 use the same.

The manufacture of combed wool yarns consists of three distinct and separate operations. The first consists of carding and combing the
15 wool on the carding-engine and combing-machine, on which the burrs are removed, the wool equalized and combed, and the combed wool formed into a sliver. The second operation—called the “preparation”—is that of
20 thinning out and parallelizing this sliver and preparing it for the spinning-machine by forming it into roving yarn, which is then passed onto the third operation of spinning on the spinning-machine.

My invention relates to the second operation, called the “preparation,” being the treatment of the combed wool coming from the
25 combing-machine until it is formed into roving yarn ready for the spinning-machine; and it consists in substituting carding-engines for a certain number of the drawing-frames now
30 used in this operation of preparation, whereby not only a great saving in the machinery necessary for this operation is effected, but also its cost materially reduced.

35 As now practiced, the operation of preparation is as follows: The combed wool coming from the combing-machine is passed through a number of drawing-frames varying from seven to thirteen, according to the material
40 used, the two last of these frames being called the “finisher” and the “fine finisher,” respectively. The combed wool coming from the combing-machine is passed through a gill-box and formed into slivers, which are then
45 passed to the first drawing-frame, on which three or four slivers are united and thinned out into a single one. Of these latter, three or four are again united on the second drawing-frame and thinned out into a single one,
50 and in this way the single slivers coming from

each drawing-frame are united by fours, threes, and gradually by twos, and thinned out on the next following one, until they reach the finisher and fine finisher, on both of which only
55 two slivers are united and drawn out into one, the fine finisher delivering the roving yarn ready for the spinning-machine. The entire operation is a very tedious and expensive one, each frame having to be attended by at least
60 one person, and it requires considerable time to pass a given quantity of material through all of these frames.

By my improved method the operation of preparation is greatly simplified, the time required for the same greatly reduced—to about
65 one-half—and its expense lessened in about the same proportion.

For all the drawing-frames mentioned above as being now used—with the exception of the finisher and fine finisher, which I retain—I
70 substitute two carding-engines, the first of which I call the “preparing-card,” while I term the second the “thinning-card.” While, in the method as now used, the material coming from the combing-machine has to be formed into a
75 sliver by the latter or by a gill-box, in order to be passed through the drawing-frames, I bring the combed wool either in shape of loose flakes or of slivers or pieces of slivers onto the feed-table of the preparing-card, which is
80 arranged to equalize and parallelize the combed wool fibers, the material leaving the delivery end of the preparing-card in the shape of a sliver, which, being brought to the thinning-card, is, while passing through the same and
85 being further equalized and parallelized, thinned out to such a degree that the quantity of material delivered by this thinning-card, which is wound upon bobbins and then passed to the finisher, is exactly equal to that which
90 in the old method passed through the entire train of gill-boxes and drawing-frames previous to reaching the finisher.

In the old method the bobbins prepared on one gill-box or drawing-frame have to be arranged on the next frame, and the latter
95 stopped meanwhile, as also when one bobbin, having run off, has to be replaced by a fresh one, which causes a great loss of time. In my improved method any given quantity of combed
100

wool can be run through the two cards which I employ, in a continuous operation, delivering the hobbins to the finisher in about one-half the time required therefor in the old method, while also only one hand is required for attending the two carding-engines, thereby saving greatly in actual wages.

There is no novelty in the construction of either the preparing or the thinning card, both being carding-engines of well-known construction; but never heretofore have carding-engines been employed in the preparation of combed wool for use in fine spinning, whereby roving yarn for the spinning-frame is produced from combed wool coming from the combing-machine. I do not therefore claim any novelty in the construction of the carding-engines which I employ in the operation of preparation; but neither do I confine myself to the number of them, as I may, according to the material, find one of them sufficient for my purpose; or I may employ more than two, a saving of time and actual expense resulting in any case; but

What I claim as new, and desire to secure by Letters Patent, is—

1. The improved method, substantially as herein described, for the preparation of wool, which consists in carding and combing it, again subjecting the wool thus carded and combed to the action of a carding-engine, and then drawing it, as and for the purpose set forth.

2. The method, substantially as herein described, for the preparation of wool, which consists in first carding it, then combing it, then again subjecting it to the action of carding-engines, and then subjecting it to the action of the finishing and fine-finishing drawing-frames, as set forth.

PETER LUDWIG KLEIN.

Witnesses:

ALEXR. A. C. KLAUCKE,
P. H. MÜLLER.