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J. SOUTHWELL
CIRCULAR COMBING MACHINE

Filed May 23, 1927

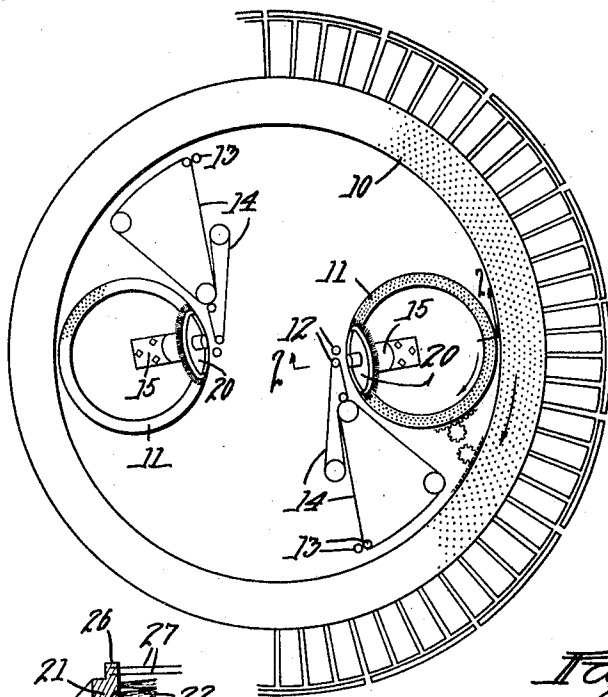


Fig. 1.

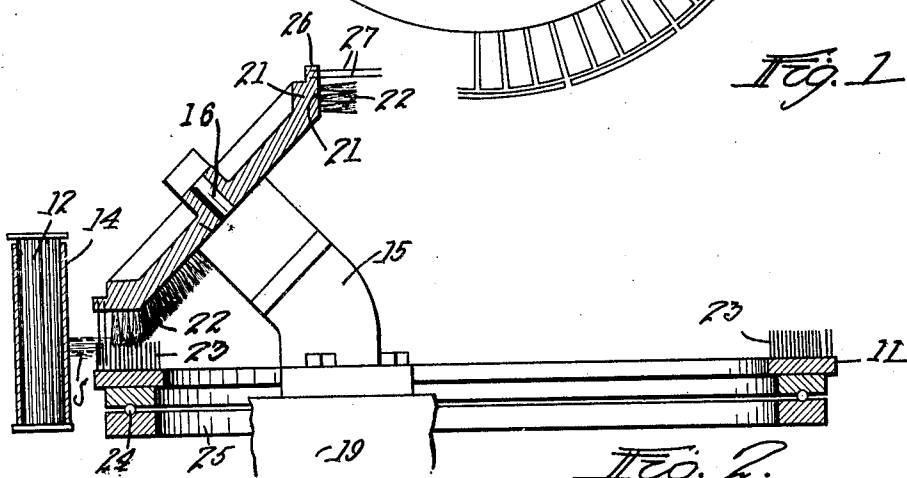


Fig. 2.

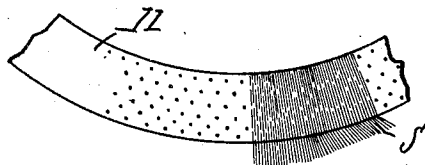


Fig. 3.

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CIRCULAR-COMBING MACHINE.

Application filed May 23, 1927. Serial No. 193,485.

This invention relates to the type of wool comb known as the Noble.

The principal objects of the invention are to modify the ordinary Noble comb in such a way as to increase the fineness and purity of the product delivered from the circles and also to provide a novel method of driving the new element which is of a flexible nature.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings in which

Fig. 1 is a diagrammatic plan of a horizontal circular comb of the Noble type with a preferred embodiment of this invention applied thereto and illustrating only a part of the outer circle;

Fig. 2 is an enlarged sectional view on the line 2—2 of Fig. 1 showing the features of this invention more fully; and

Fig. 3 is a plan on enlarged scale of part of the arc of one of the small circles showing the way in which the fibres lie thereon after being pulled out by contact with the large circle.

It will not be necessary to describe the operation of the Noble comb as this comb has all the features thereof and they work in the same way. I have shown the outer circle 10 provided with the usual pins and the small circles 11 also provided with their usual pins; also the drawing-off rollers 12 and 13 in their usual position and leathers 14 operating in the ordinary way. These features of the Noble comb are not disturbed in any way.

Within each of the small circles I provide a bracket 15 on the steam box 19 and in it place an inclined shaft 16 which is driven from the circle. On this shaft is a brush body 20 which has a conical surface 21 around it provided with tufts of brush bristles 22.

Although in Fig. 1, on account of the fact that it is a sectional view; the bristles on the opposite edges of the brush body 20 project at right angles to each other, the brush itself is conical in shape. The bristles are cut off flat to form opposite conical surfaces at their ends. Therefore those bristles which come into contact with the pins 23 on the circle 11 project into the spaces between these pins in a direction exactly parallel with them. For this reason the brush will be driven by the circle which is mounted on

ball bearings 24 on a stationary circular frame or support 25.

It will be seen that this is a flexible driving means and is, in a sense, positive, because under ordinary circumstances the tips of the bristles on the brush and the pins travel at the same speed. However, it prevents injury to the fiber that might result from an absolutely positive drive. On the brush is placed a circular flange 26, preferably integral with the brush frame, which is of metal. In this flange are located one or more rows of staggered pins 27, parallel with the bristles, which engage with the outer rows of pins on the circle and draw the fibres around the pins and remove the nibs so that a finer, cleaner and more valuable sliver will be delivered to the drawing-off rollers 12. Different brushes with finer or coarser placed pins may be substituted as required for different wool.

Of course, the drawing-off rollers 13 perform their usual function taking the sliver from the large circle and passing it between the leather and through the rollers 12 and from there to the calender rollers and cans, generally used, but not shown in these drawings.

This constitutes an inexpensive addition to this machine and results in the production of a better product which can be sold at a higher price. It involves no parts that are in the way when it is desired to change the circle as the brush bristles offer no important resistance. It will be understood that the other small circle is operated in the same way and that the large circle can be also.

The sliver is dabbed or pressed into pins of both circles in the usual way at the point where the periphery of a small circle almost touches the interior side of the larger circle. The fibres retained among the pins of the small circle are drawn away from the large circle and are combed. The part of the sliver which lies between the two circles is not combed until it reaches the brush. The drawing-off rollers draw the sliver through the brush and pins 27, thus combing and vegetable matter from the part of the sliver that lies between the small and large circles. This gives a better product on account of being free from nibs.

Although I have illustrated and described only one form of the invention I am aware of the fact that modifications can be made

therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims.

Therefore, I do not wish to be limited to the details of construction herein disclosed, but what I do claim is:—

1. The combination with the large and small circles of a horizontal circular combing machine, of a rotary brush in position for the bristles thereof to enter between the pins of a small circle to rotate the brush, and a series of pins carried by the brush for cooperating with the outer rows of pins on the small circle.

2. The combination with a freely rotatable horizontal pin circle, an inclined shaft above it, a conical brush body fixed on said shaft at an angle to the horizontal, a circle of bristles on the body, so located that at the bottom of the brush body the bristles are in vertical position and project in among the pins of said circle to be driven by it.

3. In a combing machine, the combination with a rotatable circle of pins, means for rotating the circle, and a circular set of pins rotatable by said circle into a position in alignment with, and projecting in among, the outer pins of said circle so that they will enter the outer rows of pins from above and be withdrawn therefrom angularly upward.

4. In a combing machine, the combination with a horizontal pin circle freely rotatable on its axis, of means for removing nibs therefrom comprising a conical brush, the brush being rotatable on a central axis inclined to a degree to bring the bristles into vertical position as they pass their lowest point and penetrate into the sets of pins on the circle.

In testimony whereof I have hereunto affixed my signature.

JAMES SOUTHWELL