

Sept. 22, 1925.

1,554,255

A. AUBOURG

CARDING MACHINE

Filed Sept. 20, 1923

Fig. 1

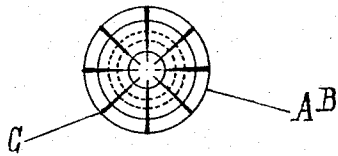


Fig. 2

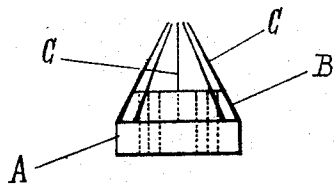


Fig. 3

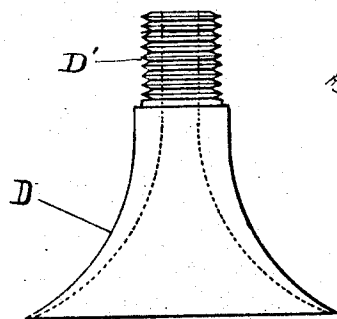
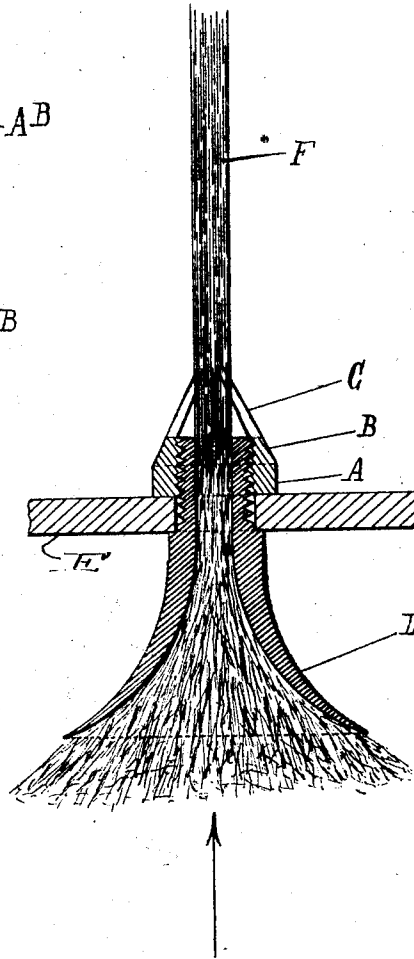


Fig. 4



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UNITED STATES PATENT OFFICE.

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CARDING MACHINE.

Application filed September 20, 1923. Serial No. 663,740.

To all whom it may concern:

Be it known that I, ANDRÉ AUBOURG, a citizen of the Republic of France, residing at Roubaix, Department of the Nord, and Republic of France, have invented certain new and useful Improvements in Carding Machines, of which the following is a specification.

In the production of textile threads of cotton or wool, or wool and cotton, it is the universal practice to subject the fibres of the material which comprises the "sliver" from which the thread is spun to the action of various devices such as carding machines, drawing machines and slubbing frames in order that the fibres of the sliver will extend longitudinally thereof and as nearly as possible in perfect parallelism. It is well known that the fibres of the slivers obtained from the carding machine do not extend in parallelism and consequently the drawing machines are principally relied upon to produce the desired parallelism of the threads. It has been recognized that it is very advantageous to produce the desired parallelism of the fibres of the sliver as early as possible in the sequence of operations to which the sliver is subjected, as by so doing a more perfect thread free from loose or floating fibres could be produced. While many different devices have been adopted for attachment to the plate in front of the drawing-off rolls of the carding machine, these devices have usually been arranged in such a way that the sliver in its travel from the carding box to the coiler has merely been subjected to some sort of a frictional effect in order to exert a straightening influence upon the fibres.

These devices have been far from satisfactory and therefore it is the principal object of this invention to provide a new and improved construction of a device of great simplicity which is adapted to perform the desirable straightening effect upon the fibres of the slivers and which device can be readily attached to a carding machine, a drawing machine or a slubbing frame.

Referring to the drawings—

Fig. 1 shows a plan view of a device embodying my invention.

Fig. 2 shows a side elevation of the structure shown in Fig. 1.

Fig. 3 is a side elevation of the funnel

usually attached to the carding machine plate and through which the fibres are passed from the carding rolls to form the sliver, and

Fig. 4 is a cross section through a funnel as shown in Fig. 3 attached to a carding machine plate in combination with the device shown in Figs. 1 and 2, the device acting as a lock-nut for the funnel, and illustrating the passage of the sliver through the device.

As shown in Figs. 1 and 2 of the drawings, my improved attachment consists of a ring A of any suitable material, such as brass and having a portion B thereof in the shape of a truncated cone. The portion B is provided with a plurality of grooves or apertures of suitable shape in each of which is adapted to be received a pin C, the pins C being secured within the grooves either by a tight fit, or by solder or in any other suitable manner. The ring A is internally screw threaded to engage upon the threaded end D' of the funnel D and acts as a lock nut for the funnel when the same is secured upon the plate E (see Fig. 4) of the carding machine.

It will be noted that the pins C converge towards the axial line of the ring to form a cone-shaped comb-like structure, the teeth of which as shown in Fig. 4 extend substantially to the center of the sliver F as it passes from the machine, the distance between the inner edges of the pins varying from 1 to 3 millimeters according to the size of thread desired.

Installation and operation of the device.

In installing the device on a carding machine a ring A provided with the pins C is either screwed directly onto the funnel D as shown in Fig. 4 on the plate of the carding machine in front of the calendar or drawing-off rolls, the ring serving as a lock nut for the funnel, or the ring may be directly secured upon the said plate. A second similar ring is preferably secured onto the funnel provided on the upper portion of the coiler or cover of the can of the carding machine. With the ring or rings secured in this manner the sliver is pulled through the ring, the pins C extending substantially to the center of the sliver and exerting a combing action upon the fibres thereof similar to the action of an ordinary combing machine.

In installing the device upon a drawing machine the ring is secured in a manner similar to that just described, upon the funnel of each drawing head, its operation being similar with the drawing machine to its operation with a carding machine.

The sliver obtained by the use of my device is of an entirely different appearance to the slivers obtained in the usual way as it possesses greater brilliancy, is more glossy and silk like, more round and uniform and is entirely free from loose or "floating" fibres.

For the same weight its volume is very greatly reduced and the capacity of a can is increased 20%. From this there results a great saving of labor formerly required for replacing the cans of the carding, drawing and slubbing machines. Furthermore, the sliver will pass through all of the various machines in an absolutely perfect manner, and finally the thread obtained is not only more uniform, more round and has fewer loose fibres, but what is of even more importance, experiments have shown an increased strength in the thread of from 10 to 15%.

While I have shown the ring as provided with eight of the pins C, it will be obvious that any desired number of pins could be employed and that the size, shape and relative arrangement of the pins may be varied without departing from the scope of my invention. While I have used the term "pins" to designate the members C, such term is not to be construed as limited to a thin cylindrical member, but is intended to cover any type of a tooth like structure capable of performing a combing action.

Having thus described my invention, what

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

1. In combination, a device adapted to be attached to a carding or drawing machine and for straightening and combing into substantial parallelism the fibres of a sliver, said device comprising a plurality of comb teeth constructed and arranged to project into the fibres of said sliver adjacent the centre thereof, and to perform a combing action on the sliver in its travel through the machine, and a funnel through which the sliver is fed before reaching said teeth.

2. A device adapted to be attached to a carding or drawing machine and for straightening and combing into substantial parallelism the fibres of a sliver, said device comprising a plurality of comb teeth constructed and arranged to form a truncated cone structure and to project into the fibres of said sliver adjacent the centre thereof, and to perform a combing action on the sliver in its travel through the machine.

3. A device adapted to be attached to a carding or drawing machine for straightening and combing into substantial parallelism the fibres of a sliver, said device comprising a plurality of comb teeth constructed and arranged to form a truncated cone structure, the opening of the smaller end of which varies from 1 to 3 millimeters according to the size of the thread desired and said comb teeth adapted to project into the fibres of said sliver adjacent the centre thereof, and to perform a combing action on the sliver in its travel through the machine.

In testimony whereof I have affixed my signature.

ANDRÉ AUBOURG.