

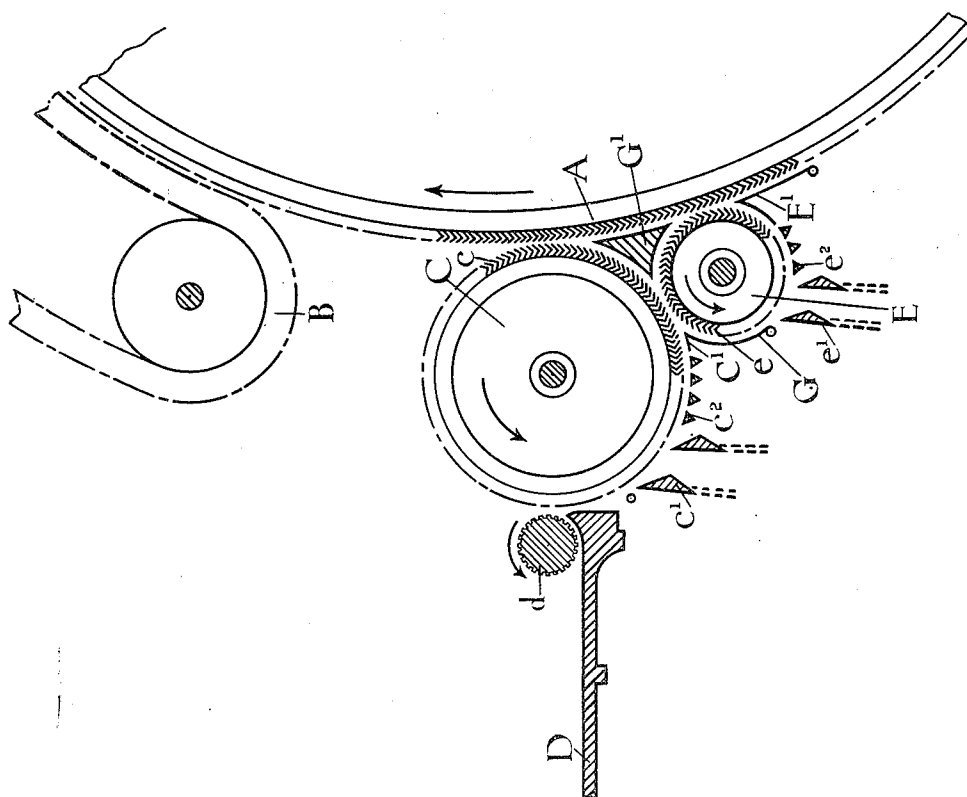
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CARDING ENGINE WITH SECONDARY TAKER-IN

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CARDING ENGINE WITH SECONDARY
TAKER-INGeorge Clapperton, Bolton, England, assignor to
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5 Claims. (Cl. 19-105)

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This invention relates to improvements in carding engines for cotton or other fibres.

According to the invention a secondary taker-in roller is arranged below the primary taker-in roller, the secondary taker-in roller being smaller in diameter and having a greater peripheral speed than the primary roller and being so disposed in relation thereto and to the card cylinder that it removes all or the greater part of the fibres from the primary roller and delivers them to the card cylinder.

The secondary taker-in roller is covered with metal wire clothing similar to but preferably finer than that of the primary roller.

The invention is illustrated in and will be described with reference to the accompanying drawing which shows a longitudinal section of sufficient of a carding engine for the invention to be understood.

In the drawing A is the usual card cylinder, *a* the card cylinder shaft, B the travelling flats, C the primary taker-in roller, D the feed plate and *d* the feed roller all of which are of usual known construction and arrangement.

A secondary taker-in roller E is mounted below the primary taker-in roller C in bearings carried in the side frames of the machine.

These bearings are preferably adjustable to allow of adjustment of the roller in relation to the primary roller C and the cylinder A.

The secondary taker-in roller E is covered with metal wire clothing *e* similar to but preferably finer than the clothing *c* of the primary roller C.

The roller E is smaller in diameter than the roller C and is rotated at a greater surface speed than the latter roller. The two rollers C and E rotate in the same direction as each other but in the opposite direction to the rotation of the card cylinder A. Thus, the wires *e* of the roller E are travelling in the opposite direction to the wires *c* of the roller C at the point where they interact.

Suitable diameters and speeds of rotation of primary taker-in roller C and secondary taker-in roller E co-operating with a carding cylinder of 50¾" diameter rotating at 160 revs. per minute are: roller C 9¾" diameter 400 revs. per minute, roller E 4¾" 1260 revs. per minute. It is to be understood that these diameters and speeds are only given by way of example and the invention is not limited thereto.

Mote knives *c*¹ are arranged in the usual position below the primary taker-in roller C and a casing C¹ carrying the grid bars *c*² extends from the front mote knife *c*¹ to a position near the periphery of the secondary taker-in roller E.

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Mote knives *e*¹ are arranged below the secondary taker-in roller E in substantially the same relative position thereto as are the mote knife *c*¹ to the roller C and the space between the front mote knife *e*¹ and the card cylinder is covered by a curved metal casing E¹ carrying transverse grid bars *e*².

A curved casing G, bolted or otherwise affixed to the frame sides, extends from the rear mote knife *e*¹ to the casing C¹ below the primary taker-in roller C and a making-up piece G¹ of approximately triangular shape is arranged in the space formed between the two taker-in rollers C and E and card cylinder A.

The fibres are fed to the primary taker-in roller C in the usual way by the feed roller *d* and are carried round by the roller C to the point where the latter meets the secondary taker-in roller E. The wires *e* of the roller E, which at this point are moving in the opposite direction to the wires *c* of the roller C, then remove most of the fibres from the wires *c* and carry them round passed the casing G and mote knives *e*¹ to the card cylinder A the wire clothing of which removes them therefrom in the usual way. Any fibres not removed from the wires *c* of the primary taker-in roller C by the wires *e* of the secondary taker-in roller E are carried forward by the roller C to the card cylinder A.

A carding engine provided with a secondary taker-in roller C arranged and operating as hereinbefore described has an additional cleaning effect on the fibres and also produces a combing or paralleling action thereon between the two taker-in rollers.

I claim:

1. A carding engine for textile fibers, comprising in combination, a card cylinder; a primary taker-in roller arranged parallel to said card cylinder and engaging the same; a secondary taker-in roller arranged parallel to said card cylinder and said primary taker-in roller so as to engage the same, said secondary taker-in roller being arranged below said primary taker-in roller, and having a smaller diameter than said primary taker-in roller, said secondary taker-in roller being driven at a greater peripheral speed than, said primary taker-in roller, said taker-in rollers and said card cylinder defining with one another a substantially triangular space; a first wire clothing arranged on said primary taker-in roller; a second wire clothing arranged on said secondary taker-in roller, said second wire clothing being finer than, and in engagement with said first wire clothing, said secondary taker-in roller being driven in the same sense as said primary taker-

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in roller; a front mote knife, a rear mote knife, and transverse grid bars arranged below said secondary taker-in roller; a curved plate extending from said rear mote knife to said primary taker-in roller; and a making-up piece having a substantially triangular shape and arranged in the space defined by said taker-in rollers and said card cylinder whereby said secondary taker-in roller removes the greater part of the fiber from said primary taker-in roller and delivers the same to said card cylinder.

2. A carding engine for textile fibers, comprising in combination, a card cylinder; a primary taker-in roller arranged parallel to said card cylinder and engaging the same; a secondary taker-in roller arranged parallel to said card cylinder and said primary taker-in roller so as to engage the same, said secondary taker-in roller being arranged below said primary taker-in roller and being driven in the same direction as, and at a greater peripheral speed than, the primary taker-in roller; a first wire clothing arranged on said primary taker-in roller; a second wire clothing arranged on said secondary taker-in roller, said second wire clothing being finer than, and in engagement with, said first wire clothing; mote knife means arranged below said secondary taker-in roller; and transverse grid bars arranged below said secondary taker-in roller whereby said secondary taker-in roller removes the greater part of the fiber from said primary taker-in roller and delivers the same to said card cylinder.

3. A carding engine for textile fibers, comprising in combination, a card cylinder; a primary taker-in roller arranged parallel to said card cylinder and engaging the same; a secondary taker-in roller arranged parallel to said card cylinder and said primary taker-in roller so as to engage the same, said secondary taker-in roller being arranged below said primary taker-in roller and being driven in the same direction as, and at a greater peripheral speed than, the primary taker-in roller; a first wire clothing arranged on said primary taker-in roller; a second wire clothing arranged on said secondary taker-in roller, said second wire clothing being finer than, and in engagement with, said first wire clothing; first mote knife means arranged below said primary taker-in roller before the zone of engagement with said secondary taker-in roller; second mote knife means arranged below said secondary taker-in roller; and transverse grid bars arranged below said secondary taker-in roller whereby said secondary taker-in roller removes the greater part of the fiber from said primary taker-in roller and delivers the same to said card cylinder.

4. A carding engine for textile fibers, comprising in combination, a card cylinder; a primary taker-in roller arranged parallel to said card cylinder and engaging the same; a secondary taker-in roller arranged parallel to said card cylinder and said primary taker-in roller so as to engage the same, said secondary taker-in roller being arranged below said primary taker-in roller and being driven in the same direction as, and

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at a greater peripheral speed than, the primary taker-in roller; a first wire clothing arranged on said primary taker-in roller; a second wire clothing arranged on said secondary taker-in roller, said second wire clothing being finer than, and in engagement with, said first wire clothing; first mote knife means and transverse grid bars arranged below said primary taker-in roller before the zone of engagement with said secondary taker-in roller; second mote knife means arranged below said secondary taker-in roller; and transverse grid bars arranged below said secondary taker-in roller whereby said secondary taker-in roller removes the greater part of the fiber from said primary taker-in roller and delivers the same to said card cylinder.

5. A carding engine for textile fibers, comprising in combination, a card cylinder; a primary taker-in roller arranged parallel to said card cylinder and engaging the same; a secondary taker-in roller arranged parallel to said card cylinder and said primary taker-in roller so as to engage the same, said secondary taker-in roller being arranged below said primary taker-in roller and having a smaller diameter than said primary taker-in roller, said secondary taker-in roller being driven at a greater peripheral speed than said primary taker-in roller, said taker-in rollers and said card cylinder refining with one another a substantially triangular space; a first wire clothing arranged on said primary taker-in roller; a second wire clothing arranged on said secondary taker-in roller, said second wire clothing being finer than, and in engagement with said first wire clothing, said secondary taker-in roller being driven in the same sense as said primary taker-in roller; a first front mote knife, a first rear mote knife, and first transverse grid bars arranged below said first taker-in roller; a second front mote knife, a second rear mote knife, and second transverse grid bars arranged below said secondary taker-in roller; a curved plate extending from said second rear mote knife to said primary taker-in roller; and a making-up piece having a substantially triangular shape and arranged in the space defined by said taker-in rollers and said card cylinder whereby said secondary taker-in roller removes the greater part of the fiber from said primary taker-in roller and delivers the same to said card cylinder.

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