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(54) **Device to automatically collect and insert the webs fed from a double comb of wool cards**

(57) Device to automatically collect and insert the web fed from at least a combing roller (2a, 2b) of a wool card (1), said device comprising a collecting channel (Ca, Cb) and a conveyor (5a, 5b) associated thereto, extending parallelly to the rotation axis of the combing roller and positioned under the respective stripping comb (3a, 3b), to convey the web (Va, Vb) towards a single central collecting point, substantially on the axis of the card (1).

The conveyor (5a, 5b) is formed by two sections of conveying belts (5a, 5a' and 5b, 5b') which move towards said central web collecting point.

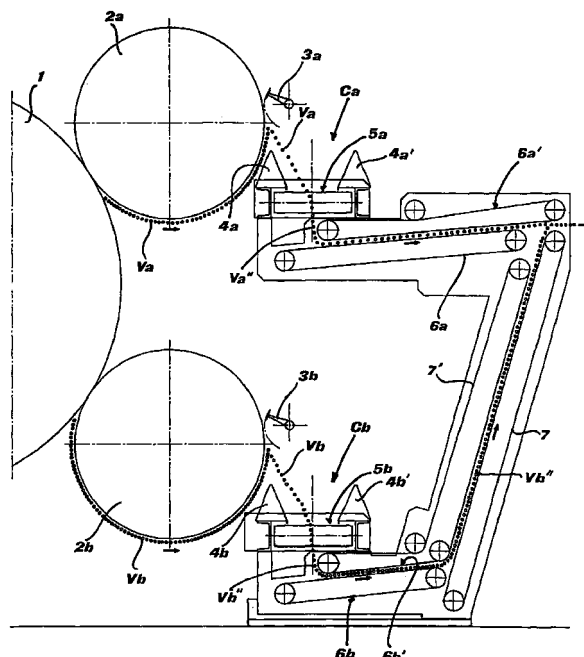


FIG.1

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Description

[0001] The present invention concerns a device to be applied downstream of a wool card with double comber so as to allow collecting, in a fully automatic way, the webs fed from the combers towards the centre of the machine, and inserting said webs onto a conveyor feeding the webs towards a further operating machine positioned downstream of the combers, particularly a drawing frame.

[0002] At present, this operation is carried out manually: when the card is set working and a web of carded fibres is formed on the combers, and when, more exactly, the web stripping combs start to remove the fibers web from the combing rollers, a machine operator provides to collect the web towards the centre and convey it manually towards an outlet conveyor.

[0003] As can be understood, this operation is no doubt uncomfortable, if not difficult, since the operator must pick up a web of considerable dimensions (in modern machines, the web may easily exceed a width of 2500 mm), both from the upper comber and from the lower one, and he must then collect the two webs to the centre so as to introduce them on the conveyor with extreme swiftness, before they pile up onto the ground. Said operation is moreover not free from risks for the operator, as he must work very close to the combing rollers, which rotate at considerable speed.

[0004] The object of the present invention is to propose a device allowing, in a fully automatic way, both to collect the webs and to introduce them onto the outlet conveyor, thus freeing the operator from the problems and risks connected with these operations. Said object is reached with the characteristics pointed out in claim 1.

[0005] Further characteristics and advantages of the device according to the present invention will anyhow be more evident from the following detailed description of a preferred embodiment thereof, given by way of non-limiting example and illustrated on the accompanying drawings, in which:

Fig. 1 is a very diagrammatic side view of the device according to the present invention; and

Fig. 2 is a diagrammatic front view of the same device shown in fig. 1.

[0006] Fig. 1 illustrates the end portion of the card, and precisely its carding swift 1, followed by two combing rollers, an upper roller 2a and a lower roller 2b, each provided with its own web stripping comb, respectively 3a and 3b.

[0007] To make the description simpler, the references followed by the letter a refer to the upper combing unit, while the references followed by the letter b refer to the lower combing unit.

[0008] According to the present invention, a collecting channel Ca, Cb, is positioned just under each web

stripping comb 3a, 3b, said channels extending parallelly to said combs, namely to the rotation axis of the combing rollers. Each collecting channel is delimited by a pair of tipped sideboards 4a, 4a' and 4b, 4b', forming a throat to pick up the web Va and Vb (see also fig. 2) which, being stripped by the web stripping comb, freely drops downward.

[0009] The bottom of the channel Ca, Cb, is formed by the belt 5a, 5b of a horizontal conveyor. More precisely - as clearly shown in fig. 2 - each of said conveyors is formed by two belt sections, each extending from one end of the conveyor towards the center and moving in opposite directions: in this way, the upper belts 5a, 5a' and respectively the lower belts 5b, 5b' of each conveyor all move towards the centre - as indicated by the arrows - conveying and thus collecting at the center the two webs of carded fibers. This web transport towards the centre is diagrammatically illustrated by the dotted lines Va' and Vb' in fig. 2.

[0010] In the central position, the two driving cylinders Ra of the belts of the conveyors are sufficiently spaced apart to allow inserting the web collected at the centre and subsequently dropping the same towards the outlet. As shown in figs. 1 and 2, the web - now indicated by Va" and Vb" - moves down towards an auxiliary conveyor, positioned below said central collecting point and arranged perpendicularly to the conveyor 5a, 5b; each auxiliary conveyor is formed by a pair of superposed beltss, respectively 6a, 6a' and 6b, 6b'.

[0011] In each auxiliary conveyor - as clearly illustrated in fig. 1 - the bottom belt 6a or 6b is longer and easily collects the web Va" or Vb" gathered at the centre, while the top belt 6a' or 6b' is shorter and its essential function is to press the gathered web against the bottom belt.

[0012] The upper auxiliary conveyor, formed by the belts 6a, 6a', conveys the web Va" directly towards the outlet of the device, for example towards a successive drawing frame. Whereas the lower auxiliary conveyor, formed by the belts 6b, 6b', conveys the web Vb" towards a further conveyor formed by the pair of belts 7, 7', which, being positioned oblique - almost verticalwise - and always keeping the web Vb" in a pressed condition, conveys it towards the top, so as to be rejoined with the web Va" in correspondence of the outlet of the device.

[0013] As can be easily seen, the device according to the present invention allows - in a fully automatic way and without requiring any manual operations - to collect the two webs Va, Vb, fed from the two combing rollers 2a, 2b, each towards the centre of the carding unit, and then join them together into a single bundle to be conveyed towards the drawing frame.

[0014] It is anyhow understood that the invention is not limited to the particular embodiment described heretofore, which merely represents a non-limiting example of its scope, but different modifications can be introduced, all within reach of a technician of the field, with-

out thereby departing from the protection field of the present invention, as defined by the following claims.

Claims

1. Device to automatically collect and insert the web (Va, Vb) fed from at least a combing roller (2a, 2b) of a wool card (1), characterized in that it comprises a collecting channel (Ca, Cb) and a conveyor (5a, 5b) associated thereto, extending parallelly to the rotation axis of the combing roller (2a, 2b) and positioned under the respective web-stripping comb (3a, 3b) to convey the web (Va, Vb) towards a single collecting point.

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2. Device to automatically collect and insert the web as in claim 1), characterized in that said web collecting point is at the centre, substantially on the longitudinal axis of the card (1).

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3. Device to automatically collect and insert the web as in claim 1), characterized in that each conveyor is formed by two sections of conveying belts (5a, 5a' and 5b, 5b') moving towards said central web collecting point.

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4. Device to automatically collect and insert the web as in claim 1), characterized in that two sideboards (4a, 4a' and 4b, 4b') are associated to said collecting channel (Ca, Cb), on the two sides of the conveyor (5a, 5b), said sideboards having a tipped configuration so as to form a collecting throat.

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5. Device to automatically collect and insert the web as in claim 1), characterized in that it also comprises an auxiliary conveyor (6a, 6b), arranged perpendicularly to said first conveyor (5a, 5b) and the inlet end of which is positioned below said central web collecting point.

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6. Device to automatically collect and insert the web as in any one of the previous claims, for a carding unit provided with a double comber (2a, 2b), characterized in that it comprises two parallel web collecting channels (Ca, Cb), with two respective main belt conveyors (5a, 5b) and two auxiliary conveyors (6a, 6b), these last two conveyors being positioned so as to converge towards a single outlet of the device.

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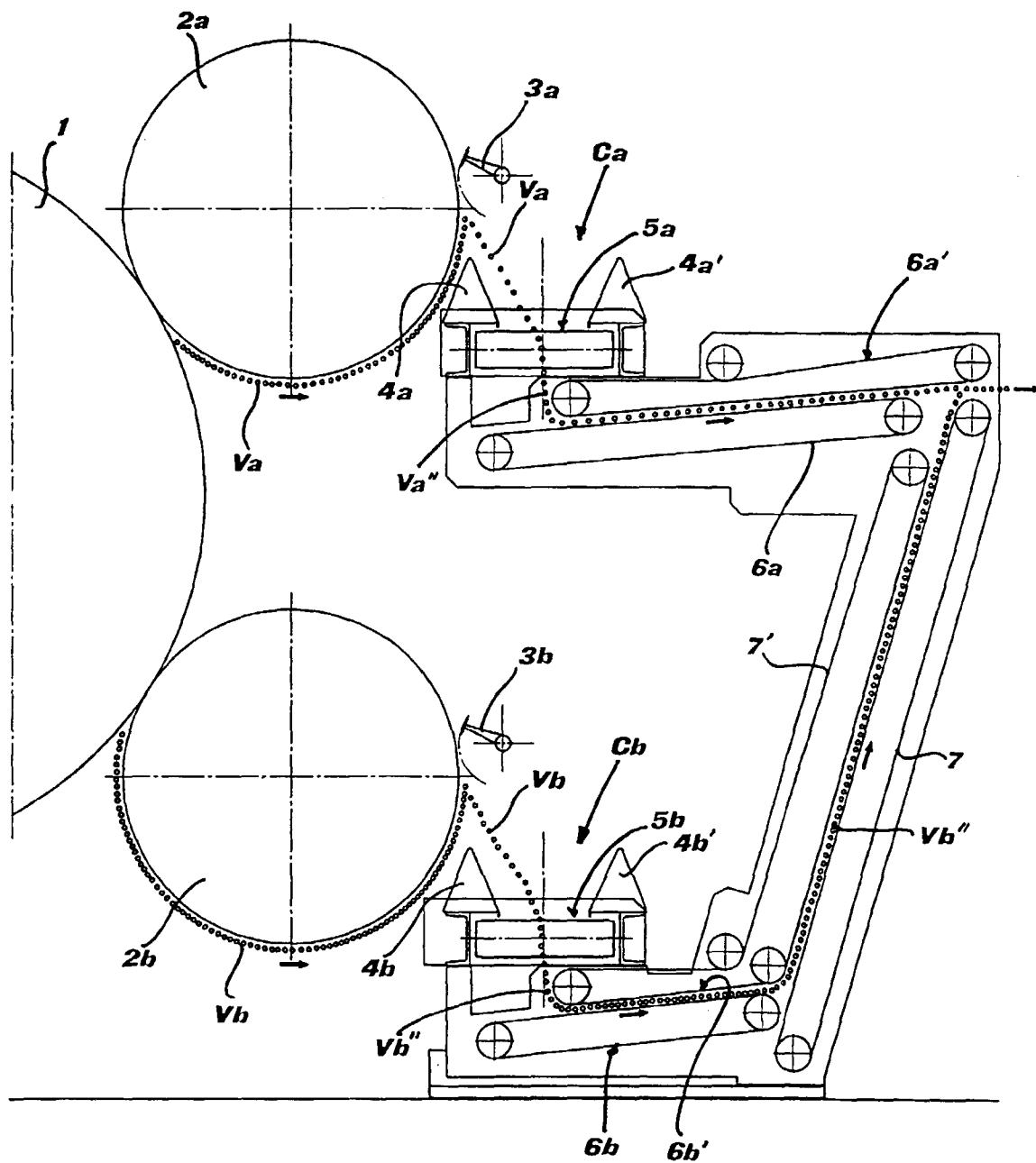


FIG.1

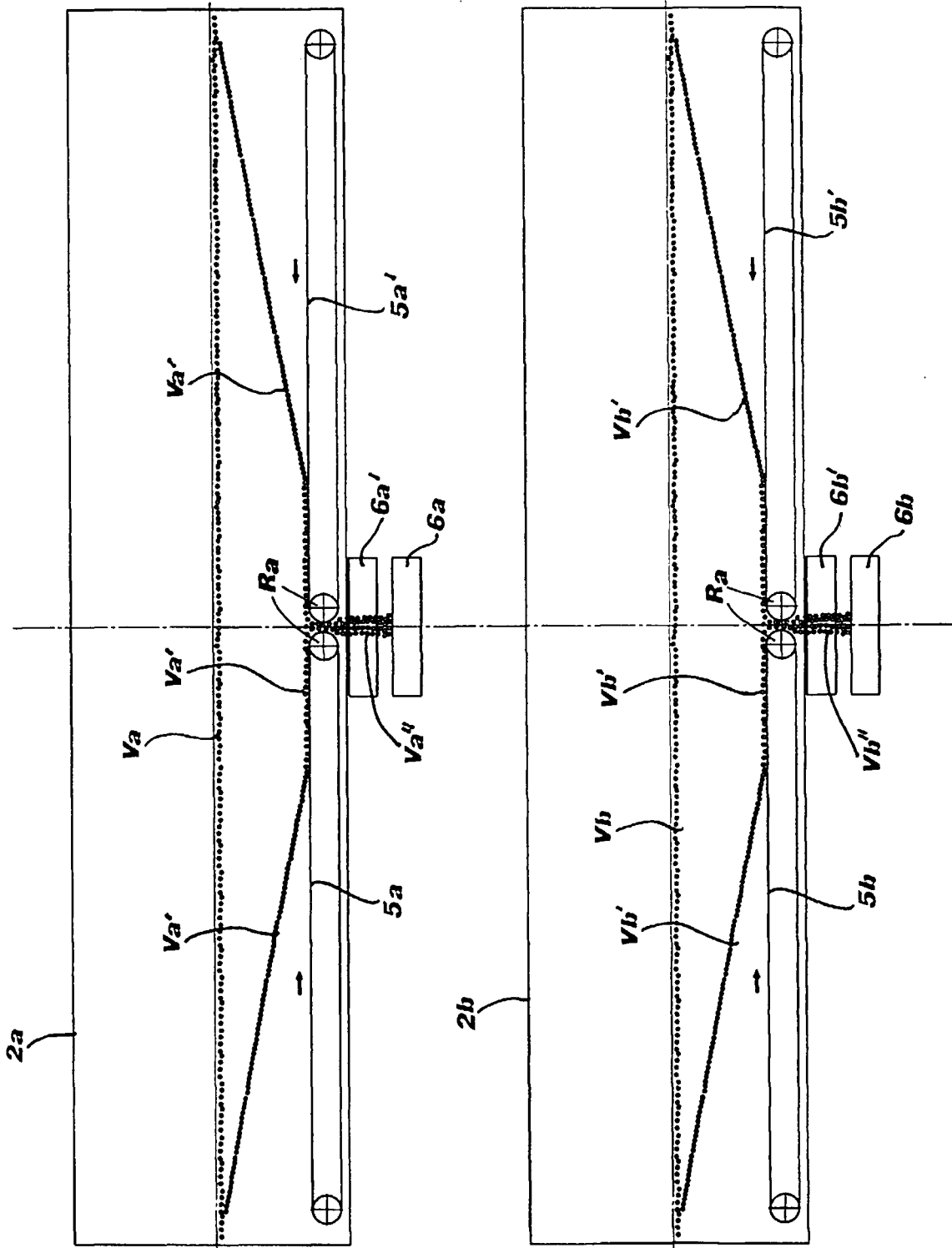


FIG. 2