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The present invention relates to a process for the production of a fancy yarn on open-end spinning devices in which sliver-like basic fibre material is unravelled into individual fibres and is fed to an open-end spinning element in an air stream, and to a device to carry out this process.

In a known device of this type (DE-OS 2.953.527), the fancy-effect fibre material is unravelled by means of a drawing mechanism and the pieces of fancy-effect material thus produced are thrown by an air stream against a screen for the purpose of being conveyed on to the gap between a pair of rotating friction rollers, where they combine with the basic material and are twisted together into a yarn. By means of a programming mechanism which influences the drive of the drawing rollers for the production of the fancy-effect material pieces, the frequency length and the thickness of the fancy material pieces in the fancy yarn are determined. Such a drive, controlled by the programming mechanism, is expensive. Furthermore, only those effects can be produced which have been input into the program mechanism. Since such a program can have only a limited range of variation it is unavoidable that the variations repeat themselves, even where costly programming is involved. For fancy yarns, however, it is desirable that if at all possible no repetitions of the variations occur or that variations repeat themselves only after long periods.

The object of the invention is to create a process and a device for the production of fancy yarn, which makes it possible to obtain by a simple method maximum random distribution of the effects.

This object is attained according to the invention in that the fancy-effect fibre material is fed at constant speed in the form of a continuous, *i.e.* uninterrupted, fibre sliver to an air stream, and in that fibre tufts are separated by the said air stream, and the fibre tufts thus separated are fed to the open-end spinning element together with the unravelled basic fibre material. The unravelling of the fibre material which produces the fancy effects is therefore not effected by a mechanically operating unravelling device, as

was done previously, but by the suction effect of the flowing air to which this material is conveyed. The air flow separates the fibres in an uneven fashion from the forward end of the fibre sliver which is retained by a feeding device. The distribution of the fancy-effect fibre material within the finished fancy yarn is therefore random with respect to size and sequence of the fibre groups or fibres separated from the fibre sliver. To carry out the process, a normal conveying device without any controls suffices, since it is not necessary to control the effects by means of variable feeding of the fancy-effect fibre material. This process according to the invention is particularly well suited for the production of yarns with colour effects. The process according to the invention is also eminently suitable for thin yarns in which the effects cannot be produced in the desired fine gradations because of the slowness of the known device.

To obtain good unravelling of the fancy-effect fibre material and to avoid thread breakages which may be caused by oversized fibre tufts, according to the invention the flow speed of the air stream is considerably higher than the feeding speed of the fancy-effect fibre material.

To assist the pneumatic unravelling of the fancy-effect fibre material, in a further embodiment of the process according to the invention the latter is subjected to retention, immediately before being brought into the air stream.

In order to ensure good mixing of the individual fibres of the basic fibre material and the fancy-effect fibre material with uniform yarn result, in an advantageous embodiment of the process according to the invention it is provided that the fancy-effect fibre material is unravelled in a fancy-material air stream into fibre tufts and that the thus separated fibre tufts are brought by this fancy-material air stream into the conveying air stream for the basic fibre material.

To give the individual fibres separated from the fancy-effect fibre material sufficient time for straightening, the fancy-effect fibre material is advantageously brought into the air stream during acceleration of the said air stream.

The flow of the individual fibres separated from the basic fibre material

is not adversely affected when it is advantageously provided that the unravelling of the fancy-effect fibre material takes place before the end of the acceleration of the air stream.

To avoid adversely affecting the parallel orientation of the fibres as they are being conveyed, in an advantageous embodiment of the process according to the invention it is further provided that the conveying air stream and the fancy-material air stream are flowing in essentially the same direction before they join together.

The unravelling of the fibre material which produces the fancy effects takes place entirely pneumatically, but not mechanically. Thus the intensity of the air stream acting upon the fibre material is of particular importance for the unravelling of the fibre sliver made up of the fancy-effect fibre material. To avoid raising the negative spinning pressure prevailing at the open-end spinning element merely for the separation of the fibre tufts, the fancy-effect fibre material is preferably fed into the conveying air stream for the basic fibre material at the point of the highest air speed.

Variation of the effects can be achieved according to the invention with the same fibre slivers being fed by the constant feeding speed of the fancy-effect fibre material being adjusted according to the desired effects.

To produce effects with more than only two colours, the fancy-effect fibre material can also be fed in the form of a plurality of fibre slivers, it also being possible for these two or more fancy-effect fibre slivers to be fed at different constant speeds.

To perform the process described, according to the invention the fibre-feeding channel is equipped with a feeding opening, through which the fancy-effect fibre material, delivered at constant speed by the feeding device, is fed to the fibre-feeding channel. The separation of the fancy-effect fibre material into the form of fibre tufts is thus effected purely by pneumatic means.

Since it has been shown that the pneumatic unravelling of the fancy-effect fibre material can be assisted considerably by guiding it over a tear-off edge, such a tear-off or retaining edge is advantageously provided between

the feeding device and the first fibre-feeding channel.

In order to optimize the separation of fibres and fibre tufts in the air stream, it can be provided that the fibre-feeding channel has cross-sectional surfaces with varying speeds of the air stream it carries, and the feeding opening is located in the area of the higher flow speed in the fibre-feeding channel. For this purpose a sliver guide is advantageously provided, which holds the fibre sliver in the zone of the higher flow speed.

To ensure that both the individual fibres separated from the basic fibre material and the individual fibres separated from the fancy-effect fibre material can stabilize before reaching the open-end spinning element, it is advantageously provided according to the invention that, in the case of a fibre-feeding channel with a tapering portion followed by a cylindrical portion, the feeding opening is located in the tapering portion of the fibre-feeding channel.

According to the invention, the unravelling of the fibre sliver made up of fancy-effect fibre material should occur so early in the air stream that the fibre sliver does not adversely affect the orientation of the individual fibres separated from the basic fibre material. This is achieved according to the invention in that the feeding opening is formed by the end of a fibre-feeding channel for the fancy-effect fibre material, the length of which exceeds the maximum standard length of the individual fibres contained in the fancy-effect fibre material.

In order for the negative spinning pressure to be as effective as possible within the second fibre-feeding channel, so that even in the case of relatively low negative spinning pressure a thorough unravelling of the fancy-effect fibre material exposed to the air stream in the form of a fibre sliver is achieved, it is advantageously provided that the fibre-feeding channel for the fancy-effect fibre material opens into the fibre-feeding channel for the basic fibre material essentially in the longitudinal direction of the latter. If the fibre-feeding channel for the basic fibre material starts out tangentially from an unravelling roller, according to a preferred embodiment of the subject of the invention the fibre-feeding channel for the fancy-effect fibre material forms the rear extension of the fibre-feeding channel for the basic

fibre material.

In order that the fancy-effect fibre material is not unravelled too finely, but remains in the form of tufts even after pneumatic separation from the fibre sliver, it is provided that the fancy-effect fibre material is fed into the basic fibre material as it travels between the unravelling roller and the open-end spinning element. In order, nevertheless, to obtain early feeding and thus good mixing, it can be provided in a further embodiment of the subject of the invention that the interior of the unravelling roller housing in the area of the beginning of the fibre-feeding channel for the basic fibre material is provided with a widening into which the fibre-feeding channel for the fancy-effect fibre material opens tangentially to the opening roller.

It has been shown that, without changing the device, a normal yarn without fancy effects can also be spun by not feeding any fibre material to the feeding opening. The air sucked in through the feeding opening does not adversely affect the normal spinning process. If it is thought to be conducive to better control of flow conditions, it can also be provided in a further embodiment of the device according to the invention that the feeding opening has associated with it a closing element. This closing element is advantageously located in the area of the fibre sliver not unravelled, so that no fibres already separated from the fibre sliver may catch on it when a fancy-effect yarn is being produced.

The feeding device is advantageously equipped with an adjustable drive so that the constant feeding speed of the fancy-effect fibre material can be set in various ways in relation to the basic fibre material.

According to the invention the feeding device for the fancy-effect fibre material can consist of a pair of rollers or of a drawing mechanism, the draft within the drawing mechanism being set so that the fibre sliver drawn in the drawing mechanism is not unravelled into individual fibres but forms a fibre sliver even when leaving the drawing mechanism, so that the separation of the fibre tufts may only be effected pneumatically by a stream of air.

To increase the variety of possible fancy effects, it is possible to provide a plurality of feeding devices and feeding openings for the feeding of

fancy-effect fibre material into the fibre-feeding channel.

The present invention makes it possible to produce a deformation-resistant fancy-effect yarn, in particular a yarn with colour effects, simply and without sliver preparation and chance variation, the effects with respect to sequence and size being left to chance. The unravelling of the fancy-effect fibre material is not effected by mechanical means, so that none of the conventional unravelling devices is required for the fancy-effect fibre material. If the presented fibre material is still too thick for direct, pneumatic unravelling, the pair of rollers of the feeding device can be fashioned with the outlet roller pair of a conventional drawing mechanism, which however draws the presented fibre material only to the extent that a still continuous, *i.e.* uninterrupted, fibre sliver emerges from this drawing equipment. This fibre sliver is then unravelled by pneumatic means only. In this way, irregular unravelling of the sliver-shaped fancy-effect fibre material to form fibre tufts is achieved without any special, randomly controllable and drivable unravelling devices being required. The configuration of the device according to the invention is thus a very simple one. In this connexion, it is not necessary in an advantageous embodiment of the device according to the invention to increase the negative spinning pressure, which produces the air stream for the unravelling of the fibre sliver, with respect to the normal spinning process, so that the device according to the invention is not only simple in construction but also economical in operation.

The invention is described hereinbelow in further detail through examples of embodiment and drawings, all of the details which are not necessary to understand the invention having been omitted from the drawings for the sake of simplicity and clarity. In the drawings

Fig. 1 is a diagrammatic side view of a first embodiment of the device according to the invention;

Fig. 2 is a diagrammatic cross-section of the arrangement of the opening of a second fibre-feeding channel into the first fibre-feeding channel in connexion with an unravelling roller equipped with a fitting winding;

Fig. 3 is a diagrammatic side view of a modification of the device shown in Fig. 1;

Fig. 4 is a diagrammatic side view of an embodiment of the device according

to the invention with two feeding devices for the fancy-effect fibre material, and

Fig. 5 is a plan view of the feeding opening of the second fibre-feeding channel.

The open-end spinning device shown in Fig. 1 comprises as the most essential elements a spinning element in the form of a spinning rotor 1, an unravelling device 2 in the form of an unravelling roller 22 and a fibre-feeding channel 3 – extending from the unravelling roller 22 to the spinning rotor 1 – for the basic fibre material 26.

The spinning rotor 1 is located in a housing 10 which is connected *via* a connexion 11 to a source of negative pressure (not shown). The housing 10 is closed by a cover 12 through which the fibre-feeding channel 3 and a thread draw-off channel 4 extend into the interior of the spinning rotor 1.

The feeding opening 52 of a fibre-feeding channel 5 for the fancy-effect fibre material 7 opens into fibre-feeding channel 3 for the basic fibre material. A feeding device 6 is located before the feeding opening 50 of this fibre-feeding channel 5. In this connexion, a gap acting as an air intake opening 51 is provided between the feeding device 6 and fibre-feeding channel 5.

The feeding device 6 consists essentially of a pair of rollers made up of a drivable feeding roller 60 and a pressure roller 61 applied against it in a resilient manner. The feeding roller 60 is driven at constant speed by a motor 63 *via* an overdrive 62.

The basic fibre material 26 is fed in conventional manner, by means of a feeding device 24, to the unravelling roller 22 located in a housing 25 and is unravelled into individual fibres 20 by the unravelling roller 22. The negative pressure prevailing at the connexion 11 of the housing 10 produces a conveying air stream 9 within fibre-feeding channel 3. This conveying air stream 9 serves as the conveying medium for the individual fibres 20 leaving the unravelling roller 22. In addition, this conveying air stream in fibre-feeding channel 3 causes an air stream 90 for the fancy-effect fibre material to be created within fibre-feeding channel 5.

The continuously and uniformly driven feeding device 6 feeds the fancy-effect fibre material at constant speed in the form of a fibre sliver 7 to fibre-feeding channel 5. In this connexion, the fibre sliver 7 can consist of a somewhat twisted slubbing sliver or of a non-twisted drawing sliver. In both cases this fibre sliver 7 still forms a continuous, *i.e.* uninterrupted, fibre sliver after leaving the feeding device 6. On account of the above-mentioned air stream 90 for the fancy-effect fibre material, which enters fibre-feeding channel 5 through the air intake opening 51, a strong suction action is exerted upon the leading end 70 of the fibre sliver 7. The leading end 70 flutters back and forth in fibre-feeding channel 5 and is thus untwisted if the fibre sliver 7 is a twisted fibre sliver. In the process individual fibres and fibre tufts 71, the backward end of which has left the clamping region of the feeding device 6, are separated in an irregular manner from the fibre sliver 7 by the air and, with the assistance of the fancy-effect fibre material air stream 90, are conveyed through the feeding opening 52 into fibre-feeding channel 3 where the individual fibres and fibre tufts 71, separated from the fibre sliver 7, mix with the individual fibres 20 separated from the basic fibre material and are fed to the open-end spinning element, *e.g.* to a spinning rotor 1, together with the individual fibres 20 of the unravelled basic fibre material 26. The unravelling of fibre sliver 7 is thus effected by pneumatic means only, the fancy effect being controlled solely by fibre friction.

On account of the uncontrolled fluttering of the leading end 70 of the fibre sliver 7 the individual fibres and fibre tufts 71 are separated pneumatically in an irregular manner from the fibre sliver 7 so that they vary in sequence and size. For this reason, no homogeneous fibre mixture occurs, even after the combination and the mixing of the individual fibres 20 and the fibre tufts 71. As a result, the fancy-effect yarn 40 produced has also an irregular pattern, although no controlling device for the fancy effects is provided. The random distribution of the fancy effects results automatically from the separation of fibres and fibre tufts 71.

In the manner described, and with the aid of the device described, any desired fibre materials can be spun together. The fancy effects appear most distinctly, however, when fibre material of different colours or colour tones is fed to the spinning rotor 1 *via* the two fibre-feeding channels 3 and 5. In this manner a yarn with irregular colour effects is produced.

As shown in Fig. 1, the fibre-feeding channel 5 is of such length that the unravelling of the fibre sliver 7 into individual fibres and fibre tufts 71 is effected with the aid of the fancy-effect fibre material air stream 90, *i.e.* that it occurs in fibre-feeding channel 5, before the latter opens into fibre-feeding channel 3 with the conveying air stream 9. The leading end 70 of the fibre sliver 7 therefore does not extend into the conveying air stream which conveys the individual fibres 20, separated from the basic fibre material 26, and thus cannot adversely affect the fibre conveying process from the unravelling roller 22 to the spinning rotor 1. In order to ensure this, the length of fibre-feeding channel 5 is selected so as to exceed the maximum standard length of the individual fibres 71 contained in the fancy-effect fibre material. In this way the fancy-effect fibre material already unravelled into individual fibres 71 is introduced by means of this fancy-effect fibre material air stream 90 into the conveying air stream 9 for the basic fibre material.

In a modification of the device described and of the process described, it is however also possible to give fibre-feeding channel 5 a shorter length than in the above-mentioned example when there is little space available. The leading end 70 of the fibre sliver 7 should however extend into fibre-feeding channel 3 only so far that fibre conveying between the unravelling roller 2 and the spinning rotor 1 is essentially not adversely affected. It has been shown that, assuming that the inner diameter of fibre-feeding channel 3 is sufficient, this is generally the case when fibre-feeding channel 5 has a length which is greater than the minimum standard length of the individual fibres 71 contained in the fancy-effect fibre material.

In this connexion, it can be ensured by various additional measures that the fibre orientation of the individual fibres 20 and of the fibre tufts 71 separated from the two fibre material patterns is not disturbed. Thus, according to Fig. 3, which shows a modification of the device shown in Fig. 1, it is provided that the conveying air stream 9 and the fancy-effect fibre material air stream 90 flow essentially in the same direction of flow in the fibre-feeding channels 3 and 5, even before coming together. Since the example of embodiment of fibre-feeding channel 5 shown in Fig. 3 constitutes the rear extension of fibre-feeding channel 3, fibre-feeding channel 5 opens into fibre-feeding channel 3, essentially in the direction of flow of the conveying air stream 9. The same is also achieved if in the modification of the device

shown in Fig. 1 the angle α between the two fibre-feeding channels 3 and 5 is kept sufficiently wide.

On the one hand, good mixing of the basic fibre material 26 and the fancy-effect fibre material is desired, so that yarn breakage is not caused by excessively large fibre tufts 71, which are fed to the spinning element (spinning rotor 1). On the other hand however, this mixing should also not be excessive, as the mixture would otherwise become too homogeneous and the fancy effects would no longer occur. For this reason, the fancy-effect fibre material is fed into the conveying air stream for the basic fibre material 26 after the latter's separation from the unravelling device 2.

The earlier-mentioned Fig. 3 shows a very early feeding of the fancy-effect fibre material into the said conveying air stream for the basic fibre material 26, *i.e.* tangentially into the housing 25 of the unravelling roller 22. The interior space receiving the unravelling roller 22 has a widening 27 in the area where fibre-feeding channel 3 for the basic fibre material 26 begins, so that the individual fibres 20 of the basic fibre material 26 can be separated from the fittings of the unravelling roller 22 even before they leave the interior space of the unravelling roller housing 25. According to Fig. 3, fibre-feeding channel 5 for the fancy-effect fibre material opens into this widening 27 of the interior space so that the fibres and fibre tufts 71 of the fancy-effect fibre material, although still entering the unravelling roller housing 25, do so without coming into contact with the fittings of the unravelling roller 22.

In order to repair a possible disarrangement of fibre orientation that might have been caused by the joining of the conveying air stream 9 and the fancy-effect fibre material air stream 90, it is provided that according to Fig. 3 that fibre-feeding channel 3 for the basic fibre material 26 comprises a first conical channel portion 30 and a second, essentially cylindrical channel portion 31. The feeding opening 52 of fibre-feeding channel 5 for the fancy-effect fibre material 7 then opens into fibre-feeding channel 3 in the zone of the first, *i.e.* the tapering channel portion 30. In this way, the conveying air stream 9 is first accelerated, and in addition to the individual fibres 20 of the basic fibre material 26, also the individual fibres 71 of the fancy-effect fibre material, fed into the accelerating conveying air stream with the aid of

the fancy-effect material air stream 90, are straightened. For this to be possible, the determination of the length of fibre-feeding channel 5, described above, ensures that the leading end 70 of the fibre sliver 7 extends at most so far into the conical channel portion 30 of fibre-feeding channel 3, that the separation of the fibres 71 may take place before the end of acceleration of the conveying air stream 9. The combined air stream then reaches the cylindrical channel portion 31 through which it flows at an essentially constant speed. The individual fibres 20 and fibre tufts 71, which can follow the air acceleration only with some delay because of their inertia, are re-accelerated in this stabilization phase, in which case their straightening and parallel orientation are improved.

The device described can be modified in various ways by replacing features by equivalents or other combinations. As shown in Fig. 3, the particular configuration of the feeding device 6 for example does not matter. Thus, instead of the pair of rollers consisting of the feeding roller 60 and the pressure roller 61, it is also possible to provide a drawing mechanism (*vide* entry roller pair 64 and exit roller pair 65), which reduces the fibre sliver 7 being fed to it to such a thickness that it can be unravelled into individual fibres and fibre tufts 71 in the air stream in the second fibre-feeding channel 5 (and possibly in the first fibre-feeding channel 3, when the leading end 70 of the fibre sliver 7 reaches as far as the inside of this first fibre-feeding channel 3). In this connexion, the speed ratios between the entry roller pair 64 and the exit roller pair 65, and possibly of additional roller pairs, are selected so that although the fibre sliver being fed in can be reduced to the desired thickness it can in no way be unravelled into single fibres and fibre tufts 71.

Just as the particular configuration of the feeding device is in principle unimportant, then open-end spinning element can also be fashioned according to desire. Fig. 3 therefore shows, as an example of embodiment of such a spinning element, a pair of friction rollers 13. In this case the air stream sucked in by the spinning elements is weaker than in the case of rotor spinning. For this reason the air stream can in certain cases be reinforced by compressed air supplied by means of an injection nozzle (*vide* compressed air nozzles 58 and 59).

Although fibre-feeding channels 3 and 5 are always provided in the case of the examples of embodiment described above, it is nevertheless possible, under certain conditions, to do without fibre-feeding channel 5 for the fancy-effect fibre material. The sliver-shaped fancy-effect fibre material is introduced into fibre-feeding channel 3 *via* a feeding opening 52, it being ensured, by means of an appropriately sized gap between the feeding device 6 and the feeding opening 52 and thus fibre-feeding channel 3, that the fibre sliver 7 only extends so far into fibre-feeding channel 3 as to ensure proper unravelling of the fancy-effect fibre material therein.

As Fig. 2 shows, the unravelling roller 22 is equipped with a saw-tooth-like fitting winding 8. Air travels through the screw-like turns of the fitting windings 8 from the one end face 28 of the unravelling roller 22, on which the leading end 80 of the fitting winding 8 is located as the unravelling roller 22 rotates (arrow 21) in the direction of the face 23, at which the trailing end 81 of the fitting winding 8 is located, or *vice versa*. The direction into which the air drifts off to the side depends on whether the peripheral speed of the unravelling roller 22 is greater than the air speed, or *vice versa*. The air speed thus increases over the cross-section in the direction of the face 23 or 28 of the unravelling roller 22. So that this increased air speed and the injector effect it causes may be fully utilized for the unravelling of the fancy-effect fibre material, the fancy-effect fibre material is fed into the conveying air stream 9 for the basic fibre material 26 at the point where air speed is highest, relative to the cross-section. According to Fig. 2 this should be at the face 23 of the unravelling roller 22, and for this reason fibre-feeding channel 5 opens into fibre-feeding channel 3 in the direction of the face 23 of the unravelling roller 2 at an offset in this example of embodiment. Thus the feeding opening 52 opens in the area of higher flow speed into fibre-feeding channel 3, *i.e.* on that side of fibre-feeding channel 3 to which the air is being conveyed through the fitting windings 8.

When fibre-feeding channel 5 is of the same width as fibre-feeding channel 3, a sliver guide 66 (Fig. 5) is installed before the introduction of the fibre sliver 7 into the second fibre-feeding channel 3 so that it holds the fibre sliver 7 on that side of fibre-feeding channel 5 on which the higher air speed is produced in fibre-feeding channel 3.

By means of the described asymmetrical feeding of the fancy-effect fibre material 7 into a cross-sectional zone of fibre-feeding channel 3 in which higher flow speed prevails, an intensive suction effect is exerted upon the fibre sliver 7 because the flow speed is considerably greater than the feeding rate of the fibre sliver 7, so that the normal negative spinning pressure at the spinning element also suffices for the unravelling of the fibre sliver 7.

To obtain a variety of fancy-effect yarns it is also possible to connect the feeding device 6 to the motor 63 (Fig. 1) in such a way that the transmission ratio can be set for different values. This can be achieved through the replacement of gears on the drive shafts of the motor 63 and of the feeding roller 60 for example. Depending on the desired intensity of the fancy effects, a higher or lower feeding speed can thus be selected for the feeding device, but this speed then remains constant during the production process.

It can also be provided that, in order to feed fancy-effect fibre material in the form of an additional fibre sliver 72, as well as fibre-feeding channel 5 with its feeding device 6, an additional fibre-feeding channel 57 with an air intake opening 53 and a feeding opening 56 and a feeding device 67 opens into fibre-feeding channel 3. The feeding device 67 also consists of a feeding roller 670 and a pressure roller 671. The feeding roller 670 is driven by the motor 63 *via* an overdrive belt 620. In order that the effects produced by the fibre sliver 7, fed by the feeding device 6, and those produced by the fibre sliver 72, fed by the feeding device 67, should be of different intensity, the feeding devices 6 and 67 are driven at different constant speeds by the motor 63 through appropriate selection of the gearing ratio.

The fancy-effect fibre material of different fibre slivers 7 and 72 can be fed into fibre-feeding channel 5 through a plurality of feeding openings or through a single feeding opening, depending upon the available space. In the latter case, the combination of the fancy-effect fibre material which has been unravelled or is yet to be unravelled occurs at the latest at the common feeding opening.

In order to establish defined unravelling conditions the fibre sliver 7 and/or 72 can be retained by the feeding device 6 or 67 respectively as it is exposed to the flow of air. For this purpose, however, it is also possible to

provide a retaining or tearing-off edge 54 between the feeding device 6 or 67 respectively and the first fibre-feeding channel 3. According to Fig. 1 it is located between fibre-feeding channel 5 and fibre-feeding channel 3. Also according to Fig. 4, a tear-off edge 54 is provided at this point, while a tear-off edge 55, made in the form of a pin is installed at a bend in fibre-feeding channel 57. Such a tear-off edge 54 or 55 respectively is very important, since it limits the effect of the air upon the free end of the fibre sliver 7 or 72 respectively. Thereby the arrival of oversized bunches of fibres into the spinning element, which could lead to yarn breakage, is avoided.

If normal yarn, without any fancy effects, is to be produced by means of the above-described open-end spinning device, it suffices to interrupt the feeding of fancy-effect fibre material through the feeding opening 52 and/or 56. This is done by switching off the drive of the feeding device 6 and/or 67. The air intake opening 51 or 53 respectively, which is required in the production of fancy-yarns to produce a current of conveying or unravelling air, has no effect upon the conveying of the individual fibres 20 separated from the basic fibre material. If however an air intake is not to be desired for reasons of air management in the open-end spinning device, it is also possible, as indicated diagrammatically in Fig. 3 by way of the example of fibre-feeding channel 5, to equip fibre-feeding channel 5 with a controllable closing element 91 which prevents such air intake in its closed position. The design of the closing device and its control can be made in various ways according to requirements. In order to avoid adversely affecting the conveying of the individual fibres 71 separated from the fibre sliver 7 in their travel to fibre-feeding channel 3, and to exclude the risk of fibre crushing, the closing element 91 in the embodiment shown in Fig. 3 is located in that zone of fibre-feeding channel 3 in which the fibre sliver 7 has not yet been unravelled into individual fibres and fibre tufts 71.

Claims:

1. A process for the production of a fancy yarn on open-end spinning devices in which sliver-like basic fibre material is unravelled into individual fibres and is fed to an open-end spinning element in an air stream, characterized in that the fancy-effect fibre material is fed at constant speed in the form of a fibre sliver to an air stream, and fibre tufts are separated by the said air stream, and the fibre tufts thus separated are fed to the open-end spinning element together with the unravelled basic fibre material.

2. A process according to Claim 1, characterized in that the flow speed of the air stream is considerably higher than the feeding speed of the fancy-effect fibre material.

3. A process according to Claim 1 or 2, characterized in that the fancy-effect fibre material, immediately before being brought into the air stream, is subjected to retention.

4. A process according to one or more of Claims 1 to 3, characterized in that the fancy-effect fibre material is unravelled in a fancy-material air stream into fibre tufts, and the thus separated fibre tufts are brought by this fancy-material air stream into the conveying air stream for the basic fibre material.

5. A process according to one or more of Claims 1 to 4, characterized in that the fancy-effect fibre material is brought into the conveying air stream during the acceleration of the said conveying air stream.

6. A process according to Claim 5, characterized in that the separation of the fancy-effect fibre material takes place before the end of the acceleration of the conveying air stream.

7. A process according to one or more of Claims 1 to 6, characterized in that the conveying air stream and the fancy-material air stream are flowing in essentially the same direction before they join together.

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8. A process according to one or more of Claims 1 to 7, characterized in that the fancy-effect fibre material is fed into the conveying air stream for the basic fibre material, relative to the cross-section, at the point of the highest air speed.

9. A process according to one or more of Claims 1 to 8, characterized in that the constant feeding speed of the fancy-effect fibre material is determined in accordance with the desired effects.

10. A process according to one or more of Claims 1 to 9, characterized in that the fancy-effect fibre material is fed in the form of a plurality of fibre slivers.

11. A process according to Claim 10, characterized in that the fibre slivers consisting of fancy-effect fibre material are brought into the conveying air stream at different constant speeds.

12. A device for performing the process according to one or more of Claims 1 to 11, with an unravelling device for unravelling the basic fibre material and a fibre-feeding channel to feed the basic material from the unravelling device to the open-end spinning element as well as with a feeding device for feeding fancy-effect fibre material, characterized in that fibre-feeding channel (3) is provided with a feeding opening (52, 56) through which the fancy-effect fibre material, which is delivered at constant speed by the feeding device (6, 67), is fed to the fibre-feeding channel (3, 5).

13. A device according to Claim 12, characterized in that a retaining edge (54, 55) is provided between the feeding device (6, 67) and fibre-feeding channel (3).

14. A device according to Claim 12 or 13, characterized in that the fibre-feeding channel (3) has cross-sectional surfaces with varying speeds of the air stream it carries, and the feeding opening (52, 56) is located in the area of higher flow speed in fibre-feeding channel (3).

15. A device according to Claim 14, characterized by a sliver guide (66) which

holds the fibre sliver (7) in the zone of higher flow speed.

16. A device according to one or more of Claims 12 to 15, equipped with a fibre-feeding channel which is provided with a tapering portion followed by a cylindrical portion, characterized in that the feeding opening (52, 56) is located in the tapering portion of the fibre-feeding channel (3).

17. A device according to Claim 16, characterized in that the feeding opening (52, 56) is formed by the end of a fibre-feeding channel (5, 57) for the fancy-effect fibre material, the length of which exceeds the maximum standard length of the individual fibres (71) contained in the fancy-effect fibre material.

18. A device according to Claim 17, characterized in that the fibre-feeding channel (5, 57) for the fancy-effect fibre material opens into fibre-feeding channel (3) for the basic fibre material essentially in the longitudinal direction of the latter.

19. A device according to Claim 18, in which the unravelling device is equipped with an unravelling roller and the fibre-feeding channel for the basic fibre material is arranged tangentially to the unravelling roller, characterized in that the fibre-feeding channel (5, 57) for the fancy-effect fibre material forms the rear extension of fibre-feeding channel (3) for the basic fibre material.

20. A device according to Claim 19, characterized in that the interior of the unravelling roller housing (25) in the area of the beginning of fibre-feeding channel (3) for the basic fibre material is provided with a widening (27) into which fibre-feeding channel (5, 57) for the fancy-effect fibre material opens tangentially.

21. A device according to one or more of Claims 12 to 20, characterized in that the feeding opening (52, 57) is equipped with a closing element (9).

22. A device according to Claim 21, characterized in that the closing element (9) is located in the area of the fibre sliver (7, 72) not unravelled.

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23. A device according to one or more of Claims 12 to 22, characterized in that the feeding device (6, 67) is equipped with an adjustable drive (62, 63).

24. A device according to one or more of Claims 12 to 23, characterized in that the feeding device (6) is constructed as a pair of rollers (60, 61).

25. A device according to one or more of Claims 12 to 24, characterized in that the feeding device (6) is constructed as a drawing mechanism (64, 65).

26. A device according to one or more of Claims 12 to 25, characterized by a plurality of feeding devices (6, 67) and feeding opening (52, 56) for the feeding of fancy-effect fibre material into fibre-feeding channel (3) for the basic fibre material.