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R. WILDBOLZ ET AL
 DEVICE FOR PRODUCING LAPS FROM CARD
 SLIVERS ON SLIVER-LAP MACHINES
 Filed May 21, 1951

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Fig. 1.

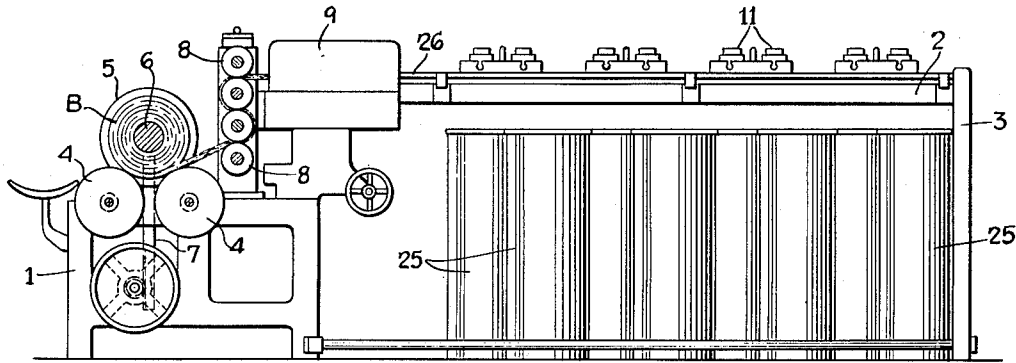


Fig. 2.

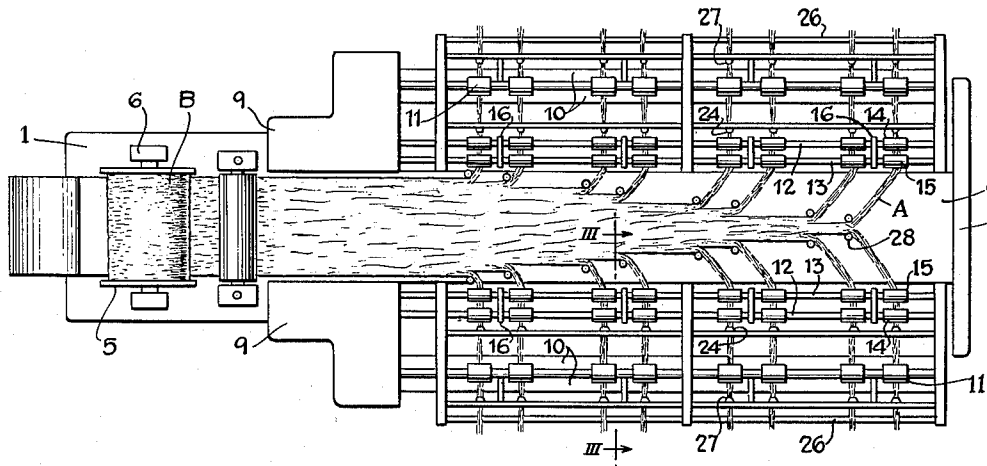
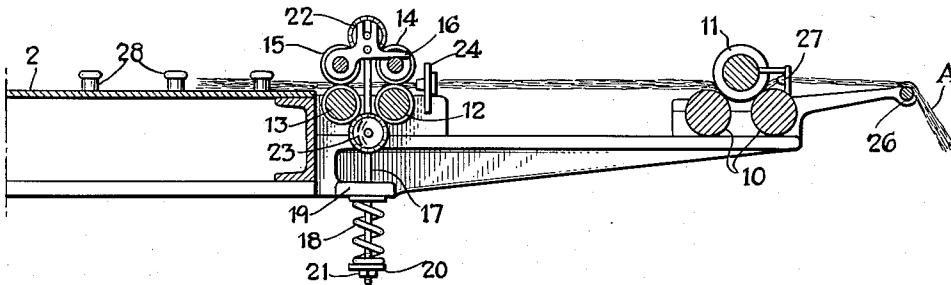


Fig. 3.



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DEVICE FOR PRODUCING LAPS FROM CARD SLIVERS ON SLIVER-LAP MACHINES

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3 Claims. (Cl. 19—157)

The present invention relates to a method and device for making laps from a plurality of slivers, particularly cotton laps, on sliver-lap machines.

In conventional sliver-lap machines, usually sixteen to twenty-four strands of textile fibres are introduced in parallel relation and are lapped either immediately or after simultaneous draft of all strands. The drawing frame is arranged ahead of the calender cylinders with respect to the flow of the material. The fibres must be gripped and guided correctly to assure faultless draft. The drawing frames provided on conventional sliver-lap machines for drawing the many juxtapositioned slivers do not satisfy this condition, because the strands running into the machine are usually not of uniform thickness; only the two thickest slivers are satisfactorily gripped, whereas the pressure on the adjacent slivers varies, particularly if the drawing frame comprises fluted steel rollers exclusively which do not yield. An irregularity in a sliver, for example a thickening, causes lifting of a roller and thereby faulty drawing of the other slivers. The relatively great distances between the rollers of conventional drawing frames necessary for maintaining the forces involved in drawing large amounts of fibres within reasonable limits impair proper control of the slivers. For the same reason, three to six pairs of rollers must be provided in conventional drawing frames for producing the desired drawing effect, which numerous rollers make such machines expensive.

It is an object of the present invention to provide a method and means avoiding the aforesaid disadvantages. According to the invention, the slivers are individually drawn independently of each other before they are united in contradistinction to conventional methods in which all slivers are drawn in the same drawing frame.

For performing the new method, the feed table of the sliver-lap machine is equipped with a drawing frame mechanism having as many drawing frames as there are individual slivers.

Further and other objects of the present invention will be hereinafter set forth in the accompanying specification and claims, and shown in the drawing which, by way of illustration, shows what we now consider to be preferred embodiments of our invention.

In the drawing:

Fig. 1 is a side view of a sliver-lap machine equipped with a drawing system according to the invention;

Fig. 2 is a top view of the machine illustrated in Fig. 1;

Fig. 3 is a longitudinal sectional large scale view of a drawing frame according to the invention for drawing an individual sliver, the section being taken along line III—III of Fig. 2.

Like parts are designated by like numerals in all figures of the drawings.

Referring more particularly to the drawing, numeral 1 designates the frame of a sliver-lap machine, the frame supporting one end of a longitudinal table 2 whose other end is supported by a wall member 3. The forward

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part of the frame 1 carries two lap rollers 4 supporting the lap B wound on a bobbin 5 whose flanges are positioned adjacent to the end faces of the rollers 4. Numeral 6 designates heads containing bearings for the spool 5, the heads being mounted at the ends of racks 7. The slivers coming from table 2 are pressed between calender rollers 8 of which four are arranged above one another. The frame 1 also supports a box 9 containing gears for driving drawing frames which are placed on the longitudinal sides of the table 2.

As seen in Fig. 3, each drawing frame comprises two juxtapositioned feed rollers 10 supporting a pressure roller 11 and two juxtapositioned drawing rollers 12 and 13 on top of and parallel to which rest pressure rollers 14 and 15, respectively. The pressure rollers are pressed in the rollers 12 and 13 by a saddle member 16 which is forced downward by a spring 18, the upper end of which abuts against a stationary rail 19 and the lower end of which rests on a plate 20 which sits on nut 21 screwed to one end of a rod 17 whose other end is connected with the saddle member 16. The pressure at which the cylinders 14 and 15 are forced against the cylinders 12 and 13 is regulated by manipulation of nut 21. A clearer roller 22 rotatably and vertically movably supported by the saddle member 16 wipes the surfaces of cylinders 14 and 15 on which it rests. A further clearer roller 23 is provided below rollers 12 and 13. The lower rollers 12 and 13 extend preferably over the whole length of table 2. The pressure rollers 14 and 15 compress two juxtapositioned slivers A which move on either side of the saddle member 16 after having been individually passed through and compressed in a trumpet 24 which is placed in front of the cooperating cylinders 12 and 14.

When the machine is in operation, the feed rollers 10, 11 lift the slivers A out of cans 25 and pull same over a guide rod 26 and through trumpets 27, the latter guiding the slivers to the center of the pressure rollers 11. The circumferential speed of the drawing rollers 12 and 14 is somewhat greater than that of the feed rollers 10 for slightly tensioning the slivers A as they move from the feed rollers to the drawing rollers. The roller pair 13, 15 is rotated faster than the rollers 12 and 14 for producing the desired drawing effect.

After having passed through the drawing frame, the slivers A reach the table 2 on which they are guided around guide rollers 28 to move parallel to one another to the calender rollers 8 from which they pass to the lap rollers 4 for forming the lap B in the conventional manner.

Since each sliver A is drawn individually, the distance between the rollers 12 and 13 may be made so as to suit the length of the fibres so that the distribution of the fibres between the rollers is not disturbed and no cuts occur in the sliver A. The amount of fibres in a sliver can be small because the slivers are drawn individually and their resistance to drawing is smaller than that of slivers containing greater amounts of fibres. There is, therefore, no faulty drawing as caused in conventional drawing frames by the lifting of the pressure rollers when adjacent slivers pass the same roller.

While we believe the above described embodiments of our invention to be preferred embodiments, we wish it to be understood that we do not desire to be limited to the exact details of method, design, and construction shown and described, for obvious modifications will occur to a person skilled in the art.

What is claimed is:

1. A sliver-lap machine for lapping a plurality of slivers, comprising a feed table having a horizontal top surface and two opposed longitudinal sides, a drawing frame placed on each of said sides and having feed

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rollers and drawing rollers whose upper surfaces are substantially in the same plane as said top surface, calender rollers disposed at one end of said table, and guide means disposed on said table for horizontally guiding the slivers coming from said drawing frames to move in parallel relation toward said calender rollers.

2. A sliver-lap machine for lapping a plurality of slivers, comprising a feed table having a top surface and two opposed longitudinal sides, a drawing frame placed on each of said sides and having feed rollers and drawing rollers, the nip of the latter being substantially in the same plane as said top surface, calender rollers disposed at one end of said table, and guide means disposed on said table for guiding the slivers coming from said drawing frames to move them in parallel relation toward said calender rollers.

3. A sliver-lap machine for combining and lapping a plurality of slivers, comprising a horizontal feed table, calender rollers disposed at one end of said table and receiving slivers moving in parallel relation on said table,

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drawing frame means having means for individually drawing each sliver, said drawing frame means being so positioned adjacent to the table that the slivers move onto the plane of said table and at a right angle to the direction in which the parallel slivers move toward the calender rollers, and a plurality of guide rollers having their rotational axis vertically disposed and mounted on said table for arranging the slivers delivered by said drawing means in parallel relationship.

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