

Sept. 13, 1949.

C. H. HARRIGAN
ANTIMARRIAGE ROLLER

2,481,998

Original Filed Oct. 21, 1946

2 Sheets-Sheet 1

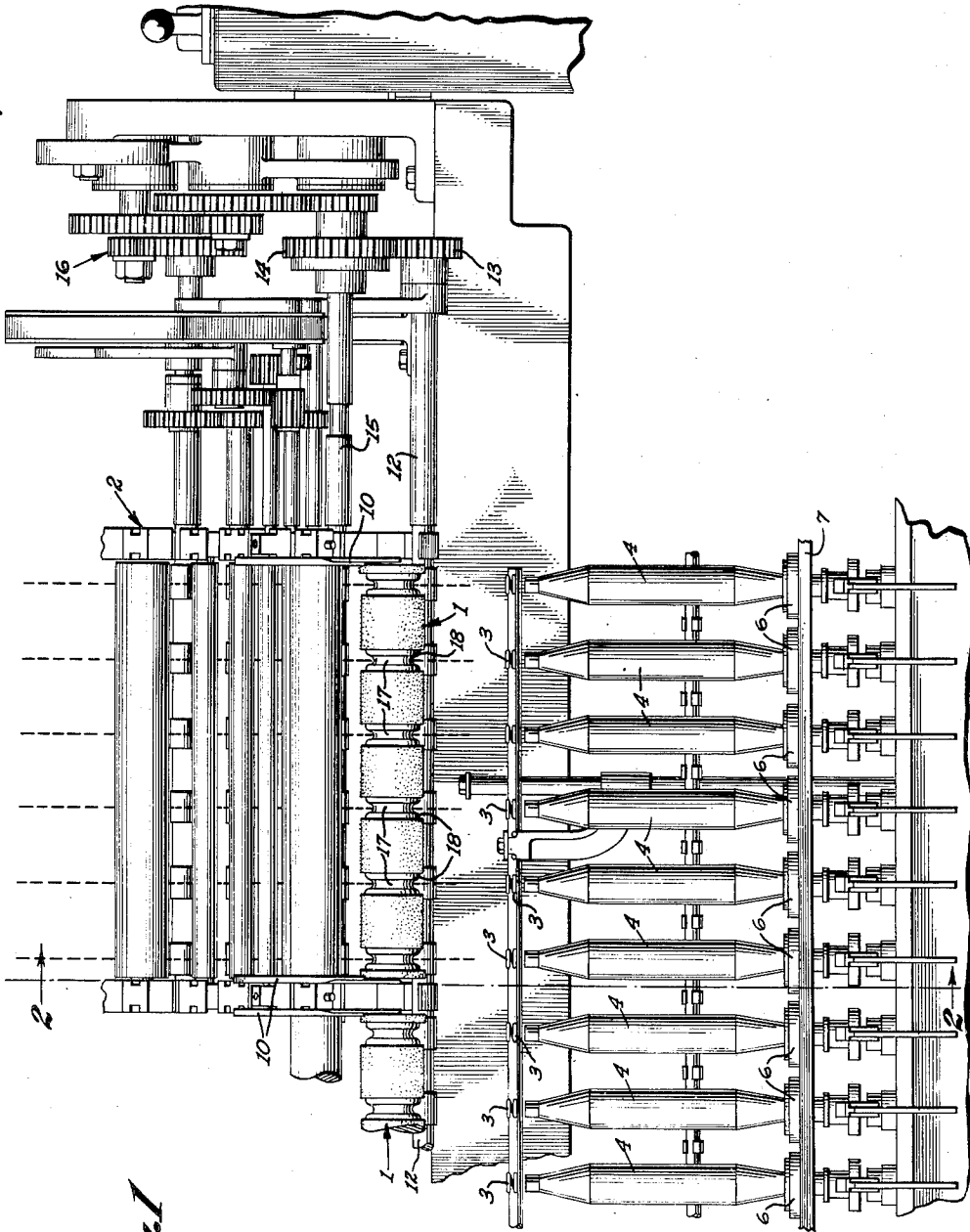


Fig. 1

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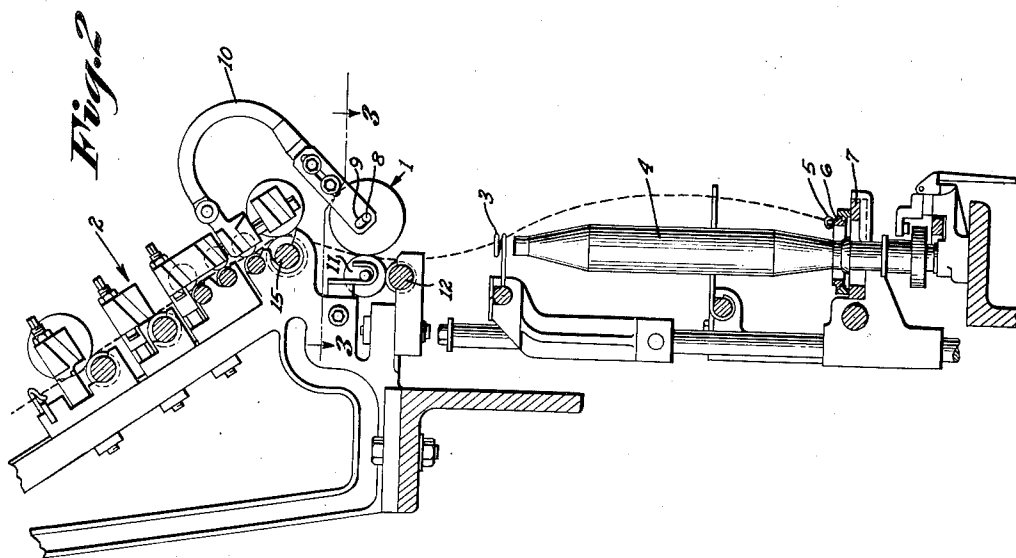
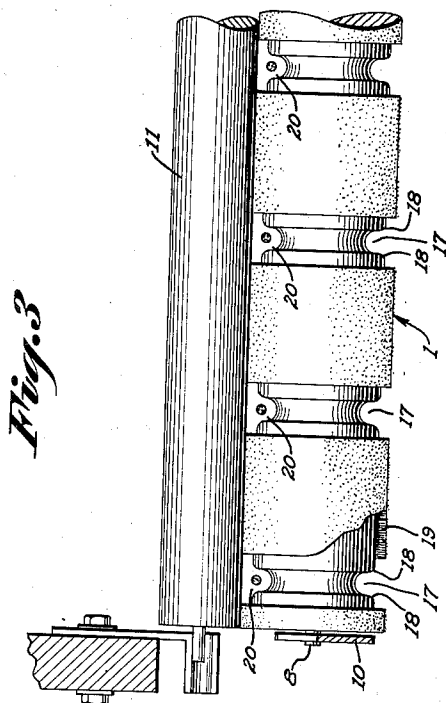
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ANTIMARRIAGE ROLLER

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5 Claims. (Cl. 57—106)

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This invention relates to devices for preventing the entanglement of adjacent strands of roving in the area between the drafting rolls and the thread guides above the bobbins of so-called ring type spinning machines, and is a division of co-pending application Serial Number 704,696, filed October 21, 1946.

In ring spinners, the strands of roving pass from the lowermost draft rolls downward through pig-tail thread guides positioned just above the bobbins and then to travelers on the ring and to the bobbins. The fast rotation of the bobbin and the traveler causes the thread to balloon outward between the traveler and the thread guide. This ballooning causes what is known as a false balloon between the thread guide and the draft rolls, the curvature of the false balloon being in a reverse direction to that of the balloon. Adjacent strands of roving running downward from the draft rolls are rather close to one another and the false balloons sometimes become entangled causing the roving to break. The tension created in the roving by centrifugal force in ballooning frequently causes roving breakage, and in such cases the broken end being fed from the draft rolls almost invariably entwines itself about the adjacent roving strand, and the two strands become twisted into a single thread unless immediately noticed by the machine operator. As standard ring spinners contain several hundred spindles, it is usually difficult for the operator to notice this co-called marriage of the strands until after some length of the double strand thread has been twisted.

A number of anti-marriage devices have been used to remedy this difficulty, and they have taken different forms, but none has completely solved the problem.

The object of the present invention is to provide an anti-marriage device which will serve to dampen the false balloon by somewhat shortening its length yet permitting considerable freedom of movement.

Another object of the invention is to provide such a device which is shaped to present little resistance to the passage of the roving strand and no surfaces or edges which might cause breakage of the strand.

Other objects of the invention will appear from the following description of one embodiment of the invention when taken in conjunction with the drawings which accompany and form a part of this specification.

In the drawings:

Figure 1 is a front elevation of an anti-mar-

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riage device constructed in accordance with the present invention and shown in position on a spinning machine;

Figure 2 is a vertical section taken on the line 2—2 of Figure 1; and,

Figure 3 is a partial section taken on the line 3—3 of Figure 2, the anti-marriage device being shown in plan.

The anti-marriage device disclosed herein is in the form of a roller 1 which is positioned on a ring-type spinner below the lowermost pair of rolls of the draft section 2, but above the pig-tail thread guides 3. Guides 3 are above spindles 4, and roving is fed from the draft rolls through guides 3 to travelers 5 mounted on rings 6 carried by the ring rail 7.

Anti-marriage roller 1 is provided with a central shaft or end trunnions 8 which fit in slots 9 in the lower ends of curved support brackets 10 which have their upper ends pivotally attached to the draft section frame. The pivotal mounting of brackets 10 permits the roller to be raised for cleaning or when repairing a broken thread. The anti-marriage roller is in contact with a roller 11 which in turn is in surface contact with a driven roller 12, so that roller 1 is rotated continuously when the spinner is in operation. Roller 12 carries a gear 13 on its outer end which is in mesh with a gear 14 upon the lowermost draft roll 15. Roll 15 is driven through gear train 16 from the usual motor (not shown).

Along its length, roller 1 has a plurality of circumferential grooves 17, spaced apart a distance equal to the spacing between strands of roving. Grooves 17 are of considerable depth, and considerably wider than the diameter of the roving strand. The peripheral shoulders of the grooves are rounded, as at 18, so that no sharp edges will be presented to roving upon which fibers might catch to cause the strand to break.

Between the grooves the roller is covered with plush 19, the edges of the covering being spaced from the grooves so that the curved shoulders 18 are not covered. The plush provides a good frictional surface to contact roller 11 to ensure constant rotation of roller 1.

Preferably the anti-marriage roller is just long enough to span one section of the drafting mechanism, and rollers are provided in accordance with the number of draft sections on the machine. Of course, the anti-marriage roller could extend the full length of the drafting mechanism, but the shorter sections are more conveniently handled.

When roller 1 is in operative position on the

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draft section, bearing upon roller 11, grooves 17 and roller 11 define openings 20 through which the roving strands pass. These openings are sufficiently large to permit the strands full freedom of lineal movement, but at the same time not so large that the strand can have any appreciable ballooning movement. To this extent openings 20 serve as thread guides. As the rollers 1 are positioned beneath the draft rolls, between the draft rolls and thread guides 3, the free length of roving between the draft rolls and guides 3 is considerably shortened, thereby diminishing the possible length of false balloon. Obviously, when the balloon length is shortened its outward swing under centrifugal force is lessened, and the possibility of interference between adjacent roving strands is practically eliminated. The fact that the roving is not tightly confined when passing between the anti-marriage roller 1 and roller 11, but is permitted some controlled movement, will cause increased dampening of the balloon as it strikes the sides of the groove and roller 11 during its rotative movement.

While one practical embodiment of the invention has been disclosed herein, it will be understood that changes may be made from the specific structure shown and described without departing from the scope of the appended claims.

What is claimed is:

1. An anti-marriage device for preventing entanglement of adjacent strands of roving in spinning machines comprising, a pair of contacting rollers, one of said rollers having a plurality of annular grooves spaced along its length, said grooves and said other roller together forming passageways through which strands of roving may pass.

2. An anti-marriage device for preventing entanglement of adjacent strands of roving in spinning machines comprising, a pair of rollers,

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one of said rollers being mounted for movement bodily away from and toward said other roller, means to rotate said rollers when said rollers are in contact with one another, one of said rollers having a plurality of annular grooves spaced along its length, said grooves and the other roller together forming passageways through which strands of roving may pass.

3. An anti-marriage device for preventing entanglement of adjacent strands of roving in spinning machines comprising, a pair of contacting rollers, one of said rollers having a plurality of annular grooves spaced along its length, the sides of said grooves flaring outwardly to merge into the outer surface of said roller forming smooth curved shoulders, said grooves and said other roller together forming passageways through which strands of roving may pass.

4. In an anti-marriage device as claimed in claim 3, the outer surface of said grooved roller being covered with a plush material between adjacent shoulders.

5. An anti-marriage device for preventing entanglement of adjacent strands of roving in spinning machines comprising, a pair of rollers, one of said rollers being mounted for movement bodily away from and toward said other roller, means to rotate said rollers when said rollers are in contact with one another, one of said rollers having a plurality of annular grooves spaced along its length, the sides of said grooves flaring outwardly to merge into the outer surface of said roller forming smooth curved shoulders, the outer surface of said grooved roller being covered with a plush material between adjacent shoulders, said grooves and said other roller together forming passageways through which strands of roving may pass.

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No references cited.