Oct. 7, 1952 R. L. SJOSTROM 2,612,987

BARRED ROLL DRIVE

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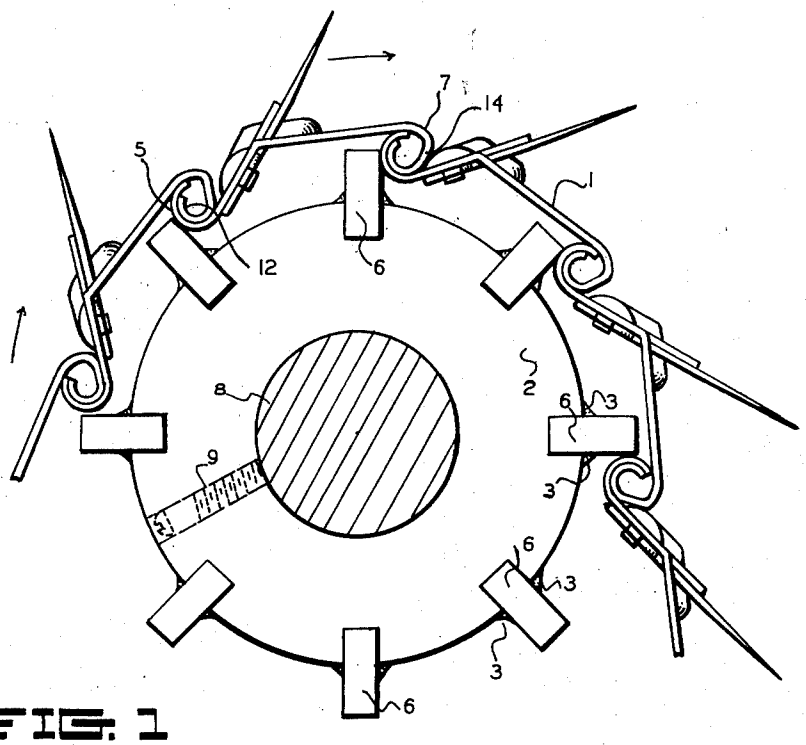


FIG. 1

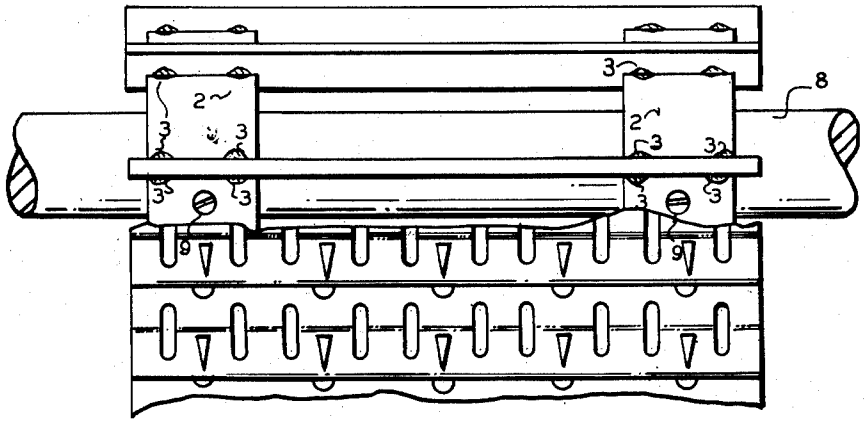


FIG. 2

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BARRED ROLL DRIVE

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2 Claims. (Cl. 198—203)

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The present invention relates to means and method of driving a link feed apron of the type disclosed in my prior patents, No. 2,258,035 issued October 7, 1941, and No. 2,426,794, issued September 2, 1947.

The type of link feed apron described in the prior patents has interlocking steel slats which may be either plain for ordinary conveying purposes, particularly horizontal conveying or may be spiked for inclined or vertical hopper feeding. The horizontal or plain conveyor may be used for any type of feed in the textile industry or any other industries for machines in which materials, particularly loose materials may be conveyed. The spike feed apron is chiefly used in textile industry in automatic hopper feeding to carry stock upwards on its way to a carding or other machine. Particularly in the spiked apron, varying degrees of tension and stress might suddenly be placed upon one section or side of the interlocking slats, causing a drag on one side or one part of the apron. While these steel slats of the type described in my prior patents, easily adjust themselves for the direction in which the apron is travelling, the individual slats themselves are intended to be substantially rigid and hold their position without flexing or bending in the slat length. This in fact is one of the chief advantages of the metallic link feed apron of my prior patents for it prevents the slats from opening or stretching and permitting the stock to work down between the slats which would obviously deform the apron structure.

In the present invention the feed is further improved by the use of barred driving rolls which are so constructed that the bars each engage each slat of the feed at the interlocking joint for the full length of the slat whereby the drive of the apron is uniform across its whole width.

The driving roll in the present invention is preferably built up on a driving shaft by means of a series of collars attached to the shaft, the collars having aligned slots in which bars are positioned parallel with the shaft axis and rigidly secured in place. The drive in this case is preferably applied to each slat along the interlocking curved joint. This construction is extremely economical since no additional engaging elements need be provided for the apron, and further is extremely advantageous since both sides of each individual slat are simultaneously moved by the driving roll. This also aids in preserving the shape of the individual slats forming the apron.

Without further describing the merits and advantages of the present invention, the invention

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will be more fully explained in the specification set forth below, showing an embodiment of the same, in which: Figure 1 shows a cross section through the barred driving roll and the link feed apron, and, Figure 2 shows a plan view of the arrangement shown in Figure 1 as viewed from the right of Figure 1.

In the arrangement indicated in Figure 1, the link feed apron is of the construction shown in my Patent No. 2,426,794, mentioned above. In this construction each link is provided with an arcuate section 5 of approximately 210° within which the end of the previous link engages having a terminating arc 12 of approximately 180°. Before this terminating end there is a flat section 14 and an arcuate section 7 on the inside end of the flat section 14. The section 5 at one side of the slats engages on the inside of the arcuate section 7 of the slat before it and on the outside of the terminating end 12. This permits one slat to have a motion considerably greater than 90° with respect to the next succeeding slat, and yet at the same time maintains successive slats in complete interlocking relation with one another.

The radius of the interlocking end section are sufficient so as to offset the body section 1 of each link sufficiently clear of the engaging bars 6, 6, etc. These engaging bars make contact with each successive interlocking arcuate end of the slats. As one bar 6 comes in contact with the outer arcuate section 5 of one slat, the bar ahead of it comes in similar contact with the arcuate section 5 of the preceding slat. On the inner side of this arcuate section 5 is the arcuate section 12 which is a part of the slat with which the first roll engages in the previously mentioned arcuate section 5. The bars 6, 6, preferably extend the whole length of the slats and contact therefore the rolled side of one slat directly, and indirectly, the other side of the same slat. This gives added support and prevents the slats from being strained or deformed in any way while on the driving roll.

The bars 6, 6, are set in collars 2, which are grooved to receive the bars. These bars are swaged into accurately machined slots and then are electrically welded at the edges as indicated at 3, 3. The collars 2, 2 are mounted on a shaft 8 at suitable spacing and the whole assembly of collars and bars may be locked in place by suitable means, for instance, by set screws 9, or through bolts, or in any other desired fashion.

The operation of the driving shaft 8 is of course dependent on the kind and type of machine to

which the link feed apron is applied. Under many conditions the shaft 8 is a permanent part of a textile machine, so that the barred driving rolls with their collars are made with desired bores to fit the machines to which they are to be applied. For this reason it is preferable that the assembly of the collars 2 and the bars 6 be a rigid unit which simply may be slid on the shaft of the machine to which it is to be applied.

Having now described my invention, I claim:

1. In combination with a link feed apron of the type described, having individual slats interlocked with one another in arcuate engaging sections on both side edges of the slat, a drive for the same comprising a plurality of collars having aligned slots formed therein, a bar firmly secured in each of the aligned slots forming thereby a substantial rigid structure, said bars and collars forming a driving roll engaging the arcuate sections at the side of the slats.

2. In combination with a link feed apron of the type described, having individual slats interlocked

with one another in arcuate engaging sections on both side edges of the slat, a driving means for said apron, comprising a plurality of cylindrical collars coaxially aligned, a plurality of equally spaced radial grooves in the outer face of the collars with the grooves in successive collars aligned with one another, a bar in each series of aligned grooves securing the collars together as a single unit, the spacing of said bars being such as to engage the arcuate side sections of the slats.

ROBERT L. SJOSTROM.

REFERENCES CITED

The following references are of record in the file of this patent:

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Number	Name	Date
1,215,183	Palen and Coulston	Feb. 6, 1917
2,059,063	Tourville	Oct. 27, 1936
2,258,035	Sjostrom	Oct. 7, 1941