March 6, 1945. W. SIEGENTHALER 2,370,923

THREAD TRAVERSE DRUM, PARTICULARLY FOR WINDING MACHINES

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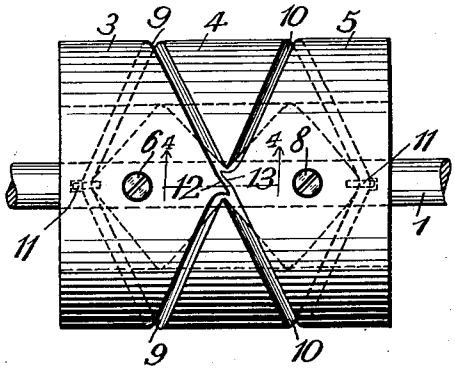


Fig. 1

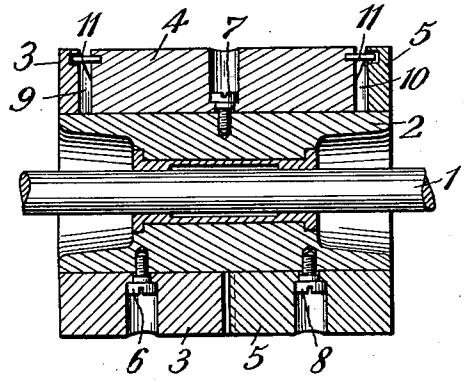
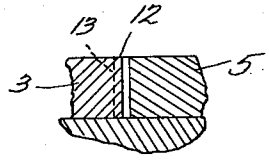


Fig. 2

Fig. 4



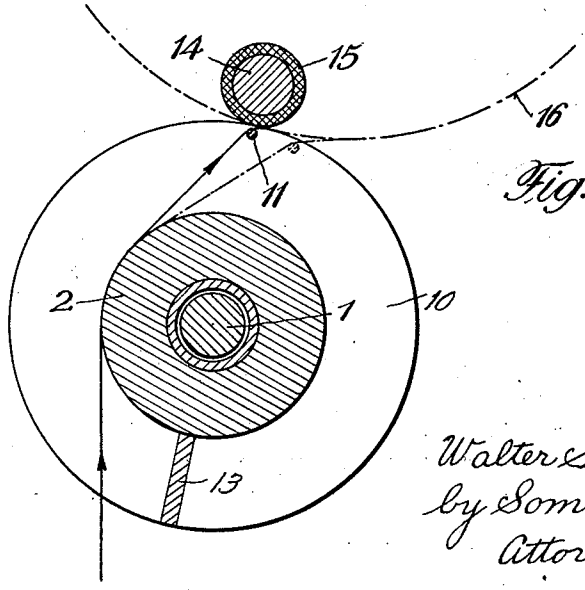


Fig. 3

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THREAD TRAVERSE DRUM, PARTICULARLY FOR WINDING MACHINES

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3 Claims. (Cl. 242—43)

This invention relates to thread traverse drums particularly intended for winding machines and comprising two intercrossing helical grooves for reciprocating the thread for producing cross-winds, the ends of the grooves merging in each other.

According to the invention, both oppositely directed guide grooves provided are formed by three main parts that are arranged on a common carrier member, namely a central part and two end parts.

By these means the manufacture of the means for guiding the thread are considerably simplified compared with the production of a grooved cylinder in the hitherto conventional manner, that is, of a cylinder into the material of the body of which grooves are worked. Furthermore, the manufacture according to the present invention allows of varying the width of the guide grooves to any desired extent without any further provisions by accordingly spacing the drum parts apart. Moreover, by virtue of the assembling of the drum of individual parts as provided the measures to be adopted for prevented the thread from taking a faulty course at the point of crossing of the grooves are facilitated, and the further advantage is obtained that the manufacture of the said individual parts is feasible by resorting to casting methods as well as to methods of producing said parts from solid working material.

An embodiment of the invention is illustrated, by way of example only, in the accompanying drawing, in which

Fig. 1 shows an elevation of a thread traverse drum according to this invention;

Fig. 2 is an axial section of the same taken on a horizontal plane of Fig. 1;

Fig. 3 is a larger scale cross section which for simplifying the illustration is assumed to be taken along the contour of a groove; and

Fig. 4 is a sectional view of part of the drum taken in line 4—4 of Fig. 1 to illustrate a detail.

The numeral 1 designates a driving shaft on which a cylindrical carrier member 2 is fixedly mounted for supporting three parts 3, 4 and 5 pushed thereonto. These three parts 3, 4 and 5 being respectively secured to the carrier member 2 by a screw 6, 7 or 8 form together two helical intercrossing, oppositely directed guide grooves 9, 10 for the feeding thread, the grooves being shown only in schematical manner. The three parts 3, 4 and 5 are bounded at their adjoining sides by mating curved portions and are spaced apart a certain distance corresponding to the width of groove as required.

At the end points where the grooves 9 and 10 merge in each other, that is at the points of reversal, a guide pin 11 traversing i. e. bridging the groove is provided which is fixed in a bore of the middle part 4 and projects into a somewhat larger bore in the respective end part 3 or 5. The specific function of these guide pins or stops 11 will be hereinafter explained. At the point of crossing of the two grooves 9 and 10 the two end parts 3 and 5 are each provided with a nose 12, 13 respectively. The two noses 13 enter on the thread guideway provided by the guide groove 9 in relatively opposite directions to such an extent that each nose protrudes across the guideway formed by the crossing groove, that is the guide groove 10, whereby during the rotation of the traverse drum skipping of the thread at the point of crossing from one groove into the other is prevented, whilst the correct passage of the thread over the drum is, however, not impaired.

In Fig. 3 a winding carrier is shown at 14 on which a thread winding is in course of formation the diameter of which is yet small. Since the individual guide pins 11 arranged at the various points of reversal are situated near the circumference of the drum traversing the thread in opposite directions the thread is guided each time when its direction is reversed by the respective pin 11 adjacent to the winding in course of formation. This guiding effect is maintained unchanged throughout the entire winding operation, thus while the thickness of the winding increases. For purposes of comparison a winding 16 of a considerably greater diameter than that of the winding 15 is indicated by a chain-dotted line in Fig. 3 together with the thread arriving from the traverse drum and being also shown in a chain-dotted line, the guide pin 11 being shown in a corresponding position.

The arrangement of the guide pins 11 at the points of reversal of the thread has the result that the placing of the thread on the winding is effected in correct manner so that no excess of thread material is deposited at the edge of the winding and consequently no what may be termed "salient threads" (projecting thread loops) are formed. In the absence of these guide pins 11 the thread would continually pass over to the thread winding in course of formation away from the traverse drum and thus also from the two points of reversal of the thread in the tangential direction. The guide grooves 9 and 10 have a constant depth throughout their extent.

The parts 3, 4 and 5 may, for example, be made of artificial resin, sheet metal or similar materials

or they may be cast. The manufacture of these parts is simple particularly for the reason that they are provided at their juxtaposed sides with a smooth wall which deviates only within the embrace of the noses 12, 13 from its uniform configuration for forming the groove, along a short stretch.

The traverse drum according to the present invention is suitable, apart from use in cross winding machines, also for combination with similar textile machines. Instead of providing the points of reversal with guide pins, guide elements for the thread may be cast to one or the other part of the drum. In the event that the drum is provided with two points of guide groove crossings the main part constituting the middle part of the drum may be assembled of several individual pieces.

I claim:

1. In a thread traverse drum, particularly for winding machines, an assembly of three circumferentially grooved main drum parts, the grooved portions of the end parts being each provided with a nose, said three assembled main parts providing a middle part and two end parts of the traverse drum, said end parts adjoining said middle part on either side of the latter and forming by their grooved portions together with the grooved portion of said middle part two crossing helical grooves for reciprocating the thread for producing a crosswind therewith, while the ends of said grooves merge in each other for forming two points of reversal of direction of traverse of said thread, said two noses extending in relatively opposite directions into the thread guideway formed by one of said grooves thereby adapting each of said noses to project across the guideway formed by the crossing groove, for preventing skipping of the thread at the point of crossing from one groove into the other, and a carrier member supporting said assembly of said three drum parts.

2. In a thread traverse drum, particularly for winding machines, an assembly of three circumferentially grooved main drum parts, said three assembled main parts providing a middle part and two end parts of the traverse drum, said end parts adjoining said middle part on either side of the latter and forming by their grooved portions together with the grooved portion of said middle part two crossing helical grooves for reciprocating the thread for producing a crosswind therewith while the ends of said grooves merge in each other for forming two points of reversal of direction of traverse of said thread, stop means for guiding the thread arranged at said points of reversal so as to bridge the thread guideway at the junctions of said groove ends, and a carrier member supporting said assembly of said three drum parts.

3. In a thread traverse drum, particularly for winding machines, an assembly of three circumferentially grooved main drum parts, said three assembled main parts providing a middle part and two end parts of the traverse drum, said end parts adjoining said middle part on either side of the latter and forming by their grooved portions together with the grooved portion of said middle part two crossing helical grooves for reciprocating the thread for producing a crosswind therewith, while the ends of said grooves merge in each other for forming two points of reversal of direction of traverse of said thread, guide pins for the thread inserted in bores in the opposite walls of the thread guideway at said points of reversal so as to bridge said guideway at the junctions of said groove ends, and a carrier member supporting said assembly of said three drum parts.

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