Jan. 20, 1959 W. A. KÖNIG 2,869,796

WINDING DEVICE FOR SPOOLING MACHINES, ESPECIALLY FOR SYNTHETIC THREADS

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FIG. 1

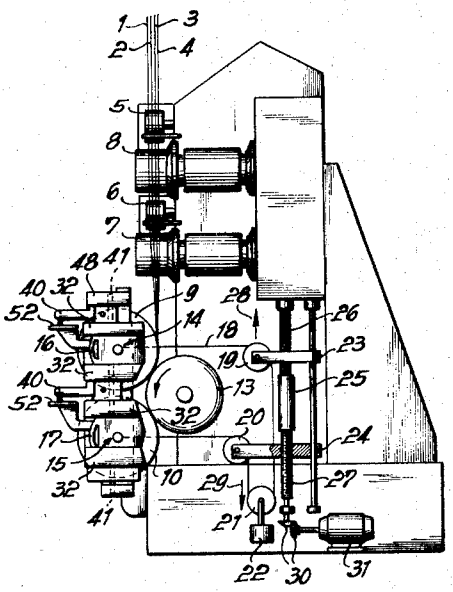


FIG. 3

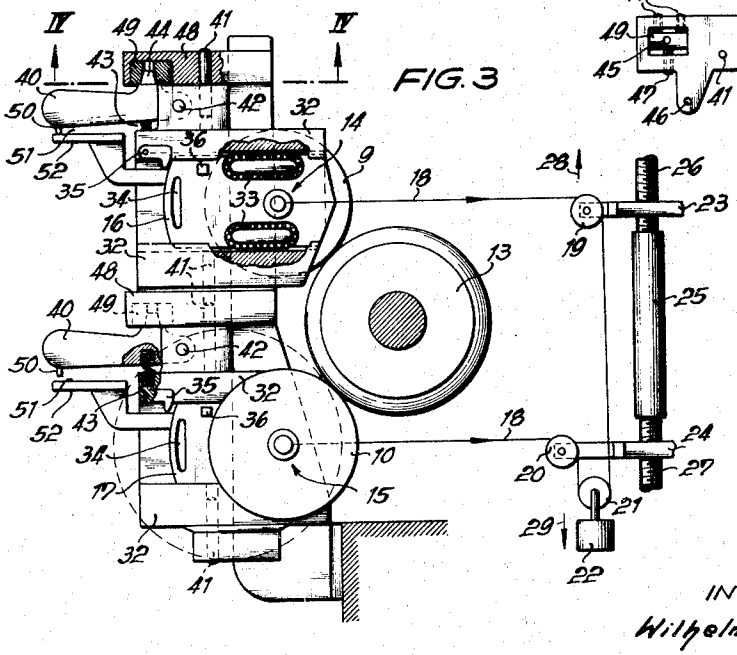
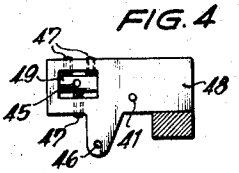


FIG. 4



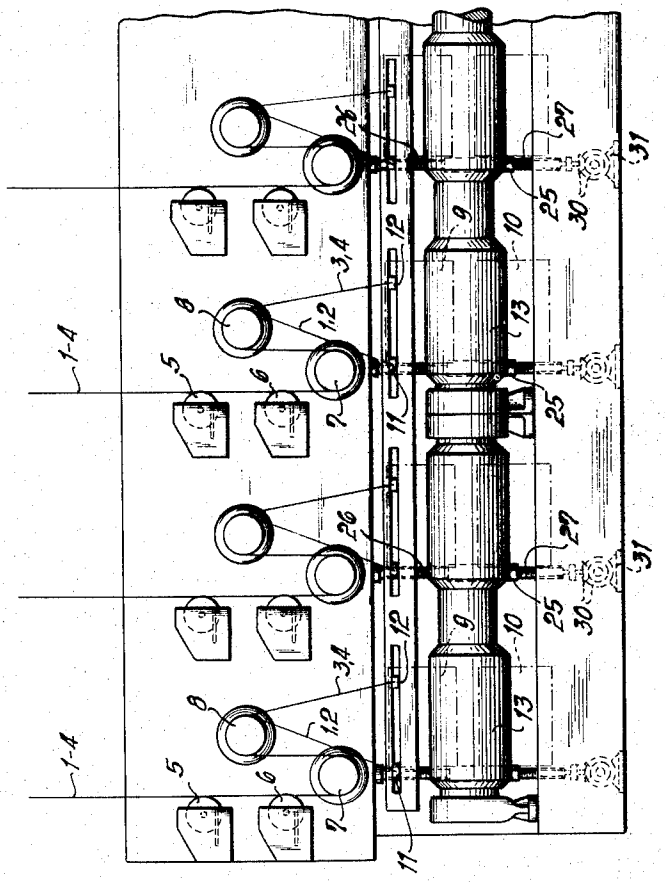
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WINDING DEVICE FOR SPOOLING MACHINES, ESPECIALLY FOR SYNTHETIC THREADS

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FIG. 2



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WINDING DEVICE FOR SPOOLING MACHINES, ESPECIALLY FOR SYNTHETIC THREADS

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FIG. 5

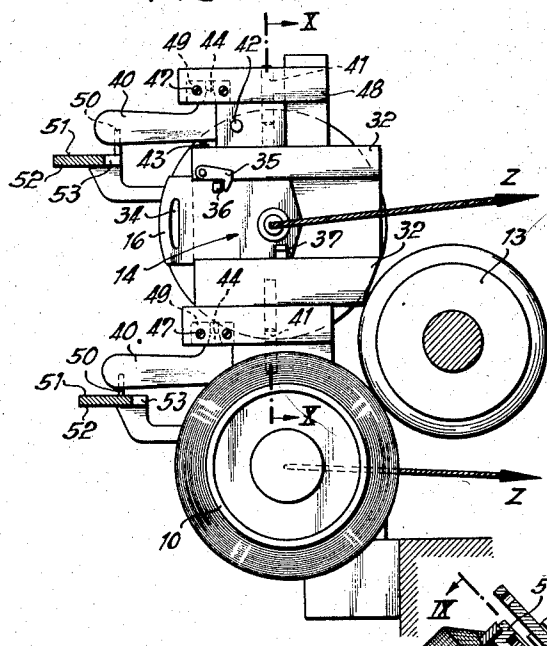


FIG. 8

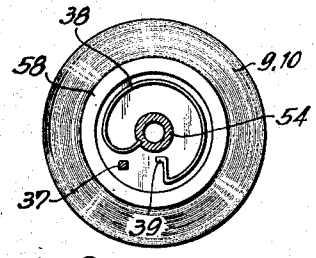


FIG. 9

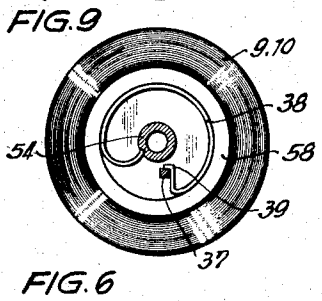


FIG. 6

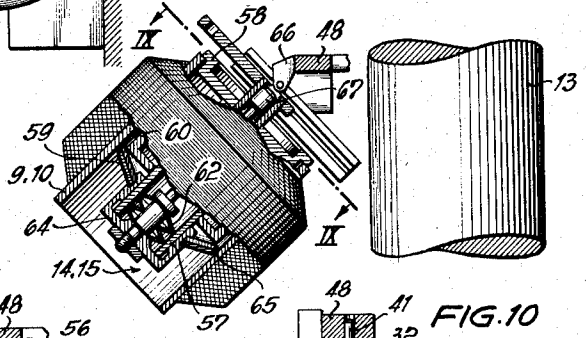


FIG. 7

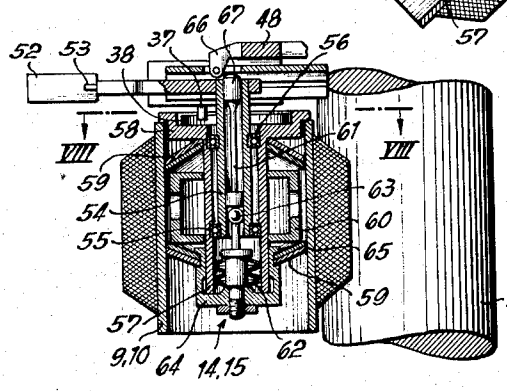
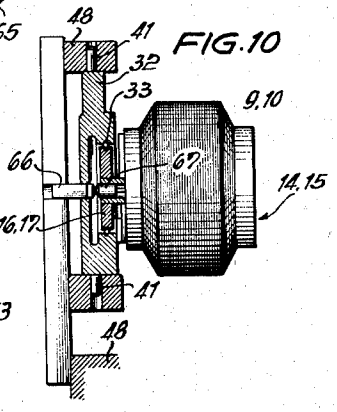


FIG. 10



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United States Patent Office 2,869,796 Patented Jan. 20, 1959

2,869,796

WINDING DEVICE FOR SPOOLING MACHINES, ESPECIALLY FOR SYNTHETIC THREADS

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Application August 1, 1955, Serial No. 525,669

Claims priority, application Germany August 4, 1954

8 Claims. (Cl. 242—35.5)

With the heretofore known winding devices associated with spooling machines, especially for synthetic fibers such as Perlon spooling machines, the freshly spun thread is passed over preparing rollers and tension rollers and wound upon a sleeve which is pressed against a driving roller so that the cop being formed is being driven by frictional force at the circumference thereof. The bobbin carrying bobbin holder is located on one end of a tiltable lever the axis of which is parallel to the axis of rotation of the driving roller, while the other end of said tiltable lever supports a counter weight so that the bobbin weight is substantially balanced.

Experience has shown that it is extremely difficult with a winding machine in which a plurality of individual cops are driven by a driving roller common to them, to obtain completely uniform pressure of all bobbins against the driving roller by corresponding adjustment of the counter weights. The precise uniformity of the pressure against all cops is, however, of great importance if it is desired to maintain the same spinning quality for all threads produced on the spooling machine.

Furthermore, it has proved necessary to vary the pressure of the cops against the driving roller according to the increasing winding diameter in conformity with a function to be ascertained empirically, if optimum quality is to be obtained for the threads to be produced. The heretofore known arrangement of the bobbin holder on tiltable levers, however, allows an unsatisfactory control of the pressure of the cops against the driving roller. This is due to the fact that the actually occurring pressure is affected by the change in the position of the tiltable lever in conformity with the increasing winding diameter so that the said pressure due to the structural arrangement of this system can be varied only within rather narrow limits. On the other hand, the increasing weight of the bobbin will due to the increasing winding diameter produce a change in the pressing force which is difficult to control and in most instances is directed opposite to the desired change in pressure.

Finally the employment of tiltable levers requires relatively much space because its arrangement is tied up to the direction of the force of gravity, and causes almost infeasible dimensions of the spooling stations if two bobbins are to be arranged one above the other.

It is, therefore, an object of the present invention to provide a winding device for spooling machines, especially for synthetic fibers, which will overcome the above mentioned drawbacks.

It is another object of this invention to provide a winding device for spooling machines, which will make it possible without increasing the overall dimensions of the spooling machine to arrange thereon an increased number of bobbins while being able to produce precisely uniform pressures for all cops.

It is still another object of this invention to provide a winding device for spooling machines which will make it possible to vary the pressing force against the cops to a desired extent in conformity with the winding diameter

or other influential factors such as time, winding speed, denier etc. and to do this within wide limits according to the actual requirements and independently of the increasing weight of the cop.

It is a still further object of this invention to provide a winding device for spooling machines according to the preceding paragraphs, which will result in a simplified operation during breakage of the thread and during the exchange of the bobbins, which is of particular importance when high spinning speeds are involved.

These and other objects and advantages of the invention will appear more clearly from the following specification in connection with the accompanying drawings, in which:

Fig. 1 is a side view of a spooling machine with a winding mechanism according to the present invention.

Fig. 2 is a portion of a front view of the spooling machine of Fig. 1.

Fig. 3 is a side view, partly in section of the winding device according to Fig. 1 shown on a scale somewhat larger than the scale of Figs. 1 and 2.

Fig. 4 represents a section taken along the line IV—IV of Fig. 3.

Fig. 5 is a partial side view of the winding mechanism corresponding to Fig. 3.

Fig. 6 is a top view, partly in section, of a bobbin in tilted-out position.

Fig. 7 is a horizontal section through a bobbin in working position.

Fig. 8 represents a section taken along the line VIII—VIII of Fig. 7.

Fig. 9 is a section taken along the line IX—IX of Fig. 6.

Fig. 10 is a section taken along the line X—X of Fig. 5.

General arrangement

The characteristic feature of the present invention consists in that the bobbin holders are displaceable in horizontal direction perpendicular to the axis of the driving roller and parallel to each other, and that the cops are pressed at uniform pressure against the driving roller. The pressing force may be produced by a weight which simultaneously acts upon a plurality of bobbin holders, while means are provided adapted to uniformly distribute the common weight load upon the individual bobbin holders. Due to the arrangement that the bobbin holders are displaceable parallel to each other, it is possible, by employing only few structural elements, to arrange the bobbins in pairs with the bobbins of each pair arranged one above the other, without having to increase the dimensions of the machine. Furthermore, the pressing force of the cops against the driving roller becomes independent of the weight of the cop, whereas due to the loading by means of a weight, a particularly simple possibility is obtained to uniformly adjust the pressing force for all cops. This uniformity is also furthered by the uniform distribution of the pressing force exerted simultaneously upon a plurality of bobbin holders by a weight common thereto. The uniform distribution of the weight load over a plurality of cops can be effected by interconnecting each two bobbins by means of a flexible pulling means on which the weight acts through the intervention of a loose roller. It is, of course, understood that also a rigid lever could be employed upon which the common force would act at the center thereof.

In order to vary the magnitude of the force exerted upon each bobbin holder, according to the present invention, when employing a flexible pulling means, the deviating rollers for deviating the pulling means may be adjustable in the machine frame to such an extent that the direction of the pulling means strand between each bobbin holder and the deviating rollers pertaining thereto,

and thus the direction of the force acting upon the bobbin holder may be varied. Due to the fixed direction of movement of the bobbin holders, only a partial component of the pulling force becomes effective when the direction of the pulling force is changed. The desired course of the change in the pressing force can be effected by providing means for adjusting the deviating rollers in conformity with the time, the winding diameter of the cops, or other variable factors. The bobbin holders are preferably journalled in parallel guides and provided with releasable ratchet mechanisms by means of which the bobbin holders which are manually returned against the pressing direction are maintained in a position in which the completed cops no longer contact the driving roller.

It is furthermore advantageous to provide the parallel guides with an abutment by means of which in the latched position of the bobbin, a brake built into the bobbin is actuated so that the cops are braked in the latching position of the bobbin holders. In order to reduce the frictional forces, preferably the bobbin holders are journalled in their parallel guides by means of anti-friction bodies such as ball guides. The narrow arrangement of the bobbins can be obtained by making each parallel guide with the respective bobbin holder and cop tiltable about an axis which is perpendicular to the direction of displacement of the bobbin and to the axis of rotation of the driving roller. Furthermore, a handle with a releasable arresting mechanism is provided for tilting out the parallel guide. The said arresting mechanism is adapted to arrest the parallel guide in its two end positions. The arresting mechanism may be so designed that the axis of rotation of the bobbin is adjustable in a parallel manner with regard to the axis of rotation of the driving roller. This can be obtained by incorporating in the arresting mechanism a conical pin which is arranged on one of the parts which can be tilted against each other, said pin being displaceable in axial direction. The arresting mechanism furthermore comprises two cone-shaped bores arranged in the other part, at least one of the cone-shaped bores being displaceable and adjustable in a supporting member in the direction of the tilting movement.

In order further to simplify the operation, the bobbin holder may be provided with a clamping device operable through a lever system for the exchangeable bobbins, and a stationarily arranged cam member may be provided for actuating said lever system during the tilting action of the parallel guide. This cam member may be so arranged that the bobbin is loosely mounted on the bobbin holder when the bobbin occupies its tilted-out position required for the bobbin exchange, whereas the bobbin is fixedly clamped to the bobbin holder when it occupies its working position. Finally a mutual blocking of the ratchet mechanism and arresting mechanism may be provided in such a manner that the tilting out and tilting in of the parallel guide will be possible in the withdrawn latching position of the bobbin holder only.

Structural arrangement

Referring now to the drawings in detail, Fig. 1 illustrates in side view the entire arrangement of a winding device according to the invention in connection with a Perlon spooling machine, whereas Fig. 2 illustrates a portion of a front view of such machine and more particularly the bobbin field thereof. In each bobbin field of such a machine for instance four threads **1**, **2**, **3** and **4** running side by side are wound upon four individual bobbins over two preparing discs **5** and **6** and tension rollers **7** and **8**. Fig. 1 shows two bobbins **9** and **10** only which are arranged above each other. Fig. 2 clearly shows the course taken by the threads. More specifically, the threads **1** and **2** pass over a reciprocating thread guide **11** to said two bobbins **9** and **10** not shown in Fig. 2, whereas the threads **3** and **4** by a second reciprocating thread guide **12** are

passed to another pair (not shown in Fig. 2) of bobbins arranged above each other. The two bobbin pairs are located closely adjacent each other and are driven in common by a driving roller **13** the circumferential speed of which corresponds to the desired winding speed. The thread **1** is wound upon the upper bobbin **9**, and the thread **2** is wound upon the lower bobbin **10**. The direction of rotation of the driving roller **13** and of the bobbins **9** and **10** is indicated in Fig. 1 by arrows. The bobbins **9** and **10** are rotatably journalled on bobbin holders **14** and **15** respectively which in their turn are connected to guiding plates **16**, **17** (Fig. 3) which are displaceable parallel to each other. Each of said guiding plates **16** and **17** has connected thereto one end of a rope or cable **18** which passes over deflecting rollers or pulleys **19** and **20** and is tensioned by means of a loose roll or pulley **21** and a weight **22** connected to said pulley **21**. The pulleys **19** and **20** are supported by guiding members **23** and **24** which by means of a threaded spindle **25** with counter running thread **26** and **27** may be moved upwardly and downwardly as indicated by the arrows **28** and **29**. The spindle **25** is as shown in Fig. 1 rotated by an electric reversible motor **31** through the intervention of a bevel gear transmission **30**. The guiding plates **16**, **17** supporting the bobbin holders with the bobbins, are displaceably journalled in parallel guides **32** by means of ball guides **33**. The guiding plates **16** and **17** have at the rear end thereof means **34** such as a handle by means of which the guiding plates can be retracted. The manual handling can, of course, also be replaced by mechanical means for instance a hydraulic device, electromagnets or the like. As shown in Fig. 5, when the guiding plates **16**, **17** are moved into their completely retracted position, they are retained in said fully retracted position by means of a pawl and pin mechanism adapted to be released and comprising a pawl **35** and a stud **36**. The parallel guiding means **32** are furthermore provided with an abutment **37** adapted to be engaged by the free end **39** of a brake band **38** as this is shown clearly in Figs. 8 and 9. The parallel guides **32** may by means of a handle **40** be tilted about studs **41** from a working position into a position expedient for the exchange of the bobbins. The studs **41** are arranged perpendicular to the axis of rotation of the driving roller **13**. The handle **40** which is tiltable about a pin **42** against the thrust of a spring **43** is provided with a cone-shaped pin **44** which in the working position of the bobbins latches into a cone-shaped bore **45** (Fig. 4) and when in tilted-out position latches into a conical bore **46**. The cone-shaped bore **45** is arranged in a supporting member **49** as shown in Fig. 4. The supporting member **49** is mounted in the machine frame **48** and by means of screws **47** is displaceable and adjustable preferably in the direction of the tilting movement of the parallel guiding means **32**. The cone-shaped bore **46**, on the other hand, is directly arranged in the machine frame.

The handle **40** is furthermore provided with a pin **50** which slides on the upper surface **51** of an arresting plate **52** mounted on the guiding plates **16** and **17**, until the guiding plate has reached its latching position. The arresting plate **52** has a passage **53** adapted to be engaged by the pin **50** when the guiding plate is in its latching position and the lever **40** is depressed. The cone-shaped bore **46** for receiving the cone-shaped pin **44** is shallower than the cone-shaped bore **45** so that the handle **40** when occupying its tilted-out position cannot completely return to its normal position as a result of which the pin **50** remains in engagement with the bore or passage **53** of the arresting plate **52**.

Each bobbin holder **14** and **15** comprises a tube **54** connected to the guiding plate **16** and **17** respectively and having rotatively journalled thereon a sleeve **57** by means of ball bearings **55** and **56**. That end of the sleeve **57** which faces the guiding plate is designed as brake drum **58**. Mounted on the sleeve **57** are further-

more slotted cup springs for instance annular clamping discs, and an intermediate member **60**, whereas a rod **61** is longitudinally displaceable in the interior of the tube **54**. When the rod **61** is displaced in the direction toward the free end of the bobbin holder, a pressure cap **64** is displaced through the intervention of a ball **63** against the thrust of the cup springs **62**. As a result thereof, the slotted cup springs **59** can assume a greater conical inclination whereby the outer diameter **65** thereof decreases and the bobbin **9** or **10** becomes loose and can be slipped over the slotted cup springs **59**. When the rod **61** is released, the cup springs **62** displace the pressure cap **64** in opposite direction so that the slotted cup springs **59** are pressed flat. As a result thereof the outer diameter of said springs **59** is increased and the newly slipped-on bobbin **9** or **10** is clamped fast to the bobbin holder. A cam member **66** is so mounted on the machine frame **48** that the end **67** of the rod **61**, which end protrudes from the bore of the tube **54** can engage the cam member **66** when the guiding plate (**16**, **17**) carrying the bobbin carrier occupies its latching position. The cam member **66** is so shaped that when the parallel guiding means **32** is tilted from its working position into the tilted-out position, the rod **61** is moved by the cam member **66** in the direction toward the free end of the bobbin holder. As a result thereof, the bobbin **9** (**10**) supported by the bobbin holder becomes loose and can then be removed therefrom.

The winding device according to the invention operates as follows. During the winding process, the bobbins **9** and **10** are circumferentially driven by the driving roller **13**. In this way, the thread **1** moved back and forth by the thread guide **11** winds upon the upper bobbin **9**, and the thread **2** simultaneously guided by the same thread guide **11** winds upon the lower bobbin **10**. By means of the weight **22**, the bobbins are pressed against the driving shaft, while care is being taken by the loose roll **21** that the pressing forces of the two bobbins will be precisely the same.

With increasing winding diameter, the bobbin center points together with the guiding plates **16** and **17** carrying the bobbin holders move away from the driving roller while they are guided by the parallel guiding means **32**. Consequently, with the load produced by the weight **22** remaining the same and with the pulleys **19** and **20** arranged stationarily, the pressure exerted by the bobbins **9** and **10** upon the driving roller **13** decreases, while the angle between the direction of the cable or rope force and the direction of the pressing force becomes smaller. If during the winding process the threaded spindle **25** is additionally rotated, the guiding members **23** and **24** carrying the pulleys **19** and **20** are displaced for instance in the direction of the arrows **28** and **29**. As a result thereof, the direction of the rope or cable force Z is changed so that a further decrease in the pressure can be obtained with increasing winding diameter. In this connection it is assumed that at the beginning of the winding process, the rope force Z as shown in Fig. 3 acts in the direction of movement of the guiding plates **16**, **17**. Fig. 5 shows the changed direction of the rope or cable force Z near the end of the winding operation. When the cop on the bobbins has been completely formed, the guiding plate is completely retracted by means of the handle **34** while the latching device **35**, **36** moves into its locking position and retains the guiding plate in a position in which the filled bobbin will not contact any longer the driving shaft. At the same time, the free end **39** of the brake band **38** has contacted the abutment **37** on the parallel guiding means (Fig. 9) whereby the bobbin is braked to a stop.

Furthermore, the arresting plate **52** connected to the guiding plate **16**, **17** has moved backwardly to such an extent that the pin **50** can now engage the recess **53** when the handle **40** is depressed. As a result thereof, the arresting device consisting of the cone-shaped pin **44** and the cone-shaped bore **45** is released so that the parallel guiding means together with the guiding plate **16**, **17**, the bobbin holder, and the bobbin can be tilted into the Fig. 6 position. In this position, the cone-shaped pin **44** engages the cone-shaped bore **46**. Since, however, the cone-shaped bore **46** has less depth than the cone-shaped bore **47**, the handle **40** can due to the spring **43** not return completely to its normal position so that the pin **50** remains sunk in the bore **53** of the arresting plate **52**. In this way, the guiding plate **16**, **17** cannot move even when the latching mechanism **35**, **36** is released. By withdrawing the guiding plate to its latching position, the end **67** of the rod **61** contacts the cam member **66** fixedly arranged in the machine frame **48**. During the tilting movement of the parallel guiding means, the cam member **66** has displaced the rod **61** in the direction toward the free end of the bobbin holder **14**, **15** so that the clamping connection between the bobbin holder and the bobbin is released and subsequently the completely filled bobbin can be taken off the bobbin holder and be replaced by an empty bobbin. When tilting the parallel guiding means back into its working position, the newly slipped-on bobbin will automatically clamp fast to the bobbin holder. After the cone-shaped pin has latched into the deeper bore **45**, also the handle **40** can return into its normal position so that following the release of the latching mechanism **35**, **36**, the bobbin is brought again to rest against the driving roller. The cone-shaped bore **45** is arranged in a separate supporting member **49** which by means of the screws **47** is displaceable in the machine frame in the direction of the tilting movement in such a manner and can be adjusted so that the axis of rotation of the bobbin is parallel to the axis of rotation of the driving roller.

In order to keep the drawings as simple and clear as possible, the releasable latching mechanism **35**, **36**, the arresting mechanism **44**, **45**, **46**, and the mutual blocking of the two devices as well as the arrangement for displacing the deviating pulleys are shown diagrammatically only.

It is, of course, understood that the present invention is, by no means limited to the particular construction shown in the drawings but also comprises any modifications within the scope of the appended claims.

What I claim is:

1. In a winding device for spooling machines, the combination of: a plurality of bobbin holders arranged in pairs with the two bobbin holders of each pair mounted one above the other, each of said bobbin holders being adapted selectively to support a bobbin for winding a cop thereon or to release said bobbin to allow removal thereof from the respective bobbin holder, a plurality of driving rollers respectively associated with each pair of bobbin holders and arranged for frictionally engaging the cops being formed on said bobbins and to rotate the latter with said cops, a plurality of slide means respectively supporting said bobbins, parallel guiding means respectively guiding said slide means for displacement thereof in horizontal direction and perpendicular to the driving axis of the respective driving rollers pertaining to each pair of said bobbin holders, pressing means operatively connected to said slide means for each pair of bobbins for simultaneously acting upon the same to uniformly press the cops respectively supported thereby against the respective driving roller pertaining thereto, and latching means respectively associated with said slide means and operable in response to a movement of said slide means away from said driving roller pertaining thereto into a certain position to lock the respective slide means in a position in which the respective completed cop supported by the slide means per-

taining thereto is spaced from the respective cooperating driving roller.

2. A winding device according to claim 1, which includes brake means respectively arranged within said bobbins, and also includes abutment means supported by said parallel guiding means responsive to the movement of the respective slide means into said certain position to act upon said brake means for causing the latter to brake said bobbin holder.

3. In a winding device for spooling machines, the combination of: a plurality of bobbin holders arranged in pairs with the two bobbin holders of each pair mounted one above the other, each of said bobbin holders being adapted selectively to support a bobbin for winding a cop thereon or to release said bobbin to allow removal thereof from the respective bobbin holder, a plurality of driving rollers respectively associated one with each pair of bobbin holders and arranged for frictionally engaging the cops being formed on said bobbins and to rotate the latter with said cops, a plurality of slide means respectively supporting said bobbins, parallel guiding means respectively guiding said slide means for displacement thereof in horizontal direction and perpendicular to the driving axis of the respective driving rollers pertaining to each pair of said bobbin holders, shaft means respectively associated with each of said parallel guiding means and pivotally supporting the same to allow said parallel guiding means together with the respective bobbin holder and bobbin to turn as a unit about the respective shaft means, said shaft means respectively extending perpendicular to the direction of movement of the bobbin holders and the axis of rotation of the respective driving roller, and means operatively connected to a plurality of said slide means for simultaneously acting upon the same to uniformly press the cops respectively supported thereby against the respective driving roller pertaining thereto.

4. In a winding device for spooling machines, the combination of: a plurality of bobbin holders arranged in pairs with the two bobbin holders of each pair mounted one above the other, each of said bobbin holders being adapted selectively to support a bobbin for winding a cop thereon or to release said bobbin to allow removal thereof from the respective bobbin holder, a plurality of driving rollers respectively associated one with each pair of bobbin holders and arranged for frictionally engaging the cops being formed on said bobbins and to rotate the latter with said cops, a plurality of slide means respectively supporting said bobbins, parallel guiding means respectively guiding said slide means for displacement thereof in horizontal direction and perpendicular to the driving axis of the respective driving rollers pertaining to each pair of said bobbin holders, shaft means respectively associated with each of said parallel guiding means and pivotally supporting the same to allow said parallel guiding means together with the respective bobbin holders and bobbin to turn as a unit about the respective shaft means, said shaft means respectively extending perpendicular to he direction of movement of the bobbin holders and the axis of rotation of the respective driving roller, manually operable means respectively associated with said parallel guiding means for turning said parallel guiding means about said shaft means from a first position into a second position and vice versa, locking means associated with said manually operable means for respectively and selectively locking the respective parallel guiding means in said first or said second position, and means operatively connected to a plurality of said slide means for simultaneously acting upon the same to uniformly press the cops respectively supported thereby against the respective driving roller pertaining thereto.

5. A winding device according to claim 4, in which said locking means includes an adjustable member provided with a bore adapted to be engaged by a pin connected to said manually operable means, said adjustable member being adjustable for cooperation with said pin so that the axis of rotation of the bobbins remains parallel to the axis of rotation of the driving roller.

6. In a winding device for spooling machines, the combination of: a plurality of bobbin holders arranged in pairs with the two bobbin holders of each pair mounted one above the other, each of said bobbin holders being adapted selectively to support a bobbin for winding a cop thereon or to release said bobbin to allow removal thereof from the respective bobbin holder, a plurality of driving rollers respectively associated one with each pair of bobbin holders and arranged for frictionally engaging the cops being formed on said bobbins and to rotate the latter with said cops, a plurality of slide means respectively supporting said bobbins, parallel guiding means respectively guiding said slide means for displacement thereof in horizontal direction and perpendicular to the driving axis of the respective driving rollers pertaining to each pair of said bobbin holders, shaft means respectively associated with each of said parallel guiding means and pivotally supporting the same to allow said parallel guiding means together with the respective bobbin holder and bobbin to turn as a unit about the respective shaft means, said shaft means respectively extending perpendicular to the direction of movement of the bobbin holders and the axis of rotation of the respective driving roller, manually operable means respectively associated with said parallel guiding means for turning said parallel guiding means about said shaft means from a first position into a second position and vice versa, locking means associated with said manually operable means for respectively and selectively locking the respective parallel guiding means in said first or said second position, said locking means comprising a relatively stationary part and a tiltable part, one of said last mentioned two parts being provided with a cone-shaped pin, and the other of said two parts being provided with two spaced bores for engagement by said cone-shaped pin, at least one of said cone-shaped bores being provided in a supporting member displaceable and adjustable in the tilting direction of said tiltable part, and means operatively connected to a plurality of said slide means for simultaneously acting upon the same to uniformly press the tops respectively supported thereby against the respective driving roller pertaining thereto.

7. In a winding device for spooling machines, the combination of: a plurality of bobbin holders arranged in pairs with the two bobbin holders of each pair mounted one above the other, each of said bobbin holders being adapted selectively to support a bobbin for winding a cop thereon or to release said bobbin to allow removal thereof from the respective bobbin holder, a plurality of driving rollers respectively associated one with each pair of bobbin holders and arranged for frictionally engaging the cops being formed on said bobbins and to rotate the latter with said cops, a plurality of slide means respectively supporting said bobbins, parallel guiding means respectively guiding said slide means for displacement thereof in horizontal direction and perpendicular to the driving axis of the respective driving rollers pertaning to each pair of said bobbin holders, clamping means respectively arranged in said bobbins for clamping the bobbins to said bobbin holders, rod means within said bobbin holders for actuating said clamping means, fixed cam means operable to actuate said rod means in response to a predetermined tilting movement of said bobbin holders to release said clamping means for removal of the respective bobbin, and means operatively connected to a plurality of said slide means for simultaneously acting upon the same to uniformly press the cops respectively supported thereby against the respective driving roller pertaining thereto.

8. In a winding device for spooling machines, the combination of: a plurality of bobbin holders arranged in

pairs with the two bobbin holders of each pair mounted one above the other, each of said bobbin holders being adapted selectively to support a bobbin for winding a cop thereon or to release said bobbin to allow removal thereof from the respective bobbin holder, a plurality of driving rollers respectively associated one with each pair of bobbin holders and arranged for frictionally engaging the cops being formed on said bobbins and to rotate the latter with said cops, a plurality of slide means respectively supporting said bobbins, parallel guiding means respectively guiding said slide means for displacement thereof in horizontal direction and perpendicular to the driving axis of the respective driving rollers pertaining to each pair of said bobbin holders, pressing means operatively connected to a plurality of said slide means for simultaneously acting upon the same to uniformly press the cops respectively supported thereby against the respective driving roller pertaining thereto, latching means respectively associated with said slide means and operable in response to a movement of said slide means away from said driving roller pertaining thereto into a certain position to lock the respective slide means in a position in which the respective completed cop supported by the slide means pertaining thereto is spaced from the respective

cooperating driving roller, said parallel guiding means being rotatably journalled to allow tilting of said parallel guiding means together with said slide means and the respective bobbin holder pertaining thereto into a position for removal of said respective bobbin from said winding device, and locking means for respectively locking said parallel guiding means in said last mentioned position, said locking means being arranged to allow tilting movement of said parallel guiding means only when said latching means locks the respective slide means in said certain position.

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