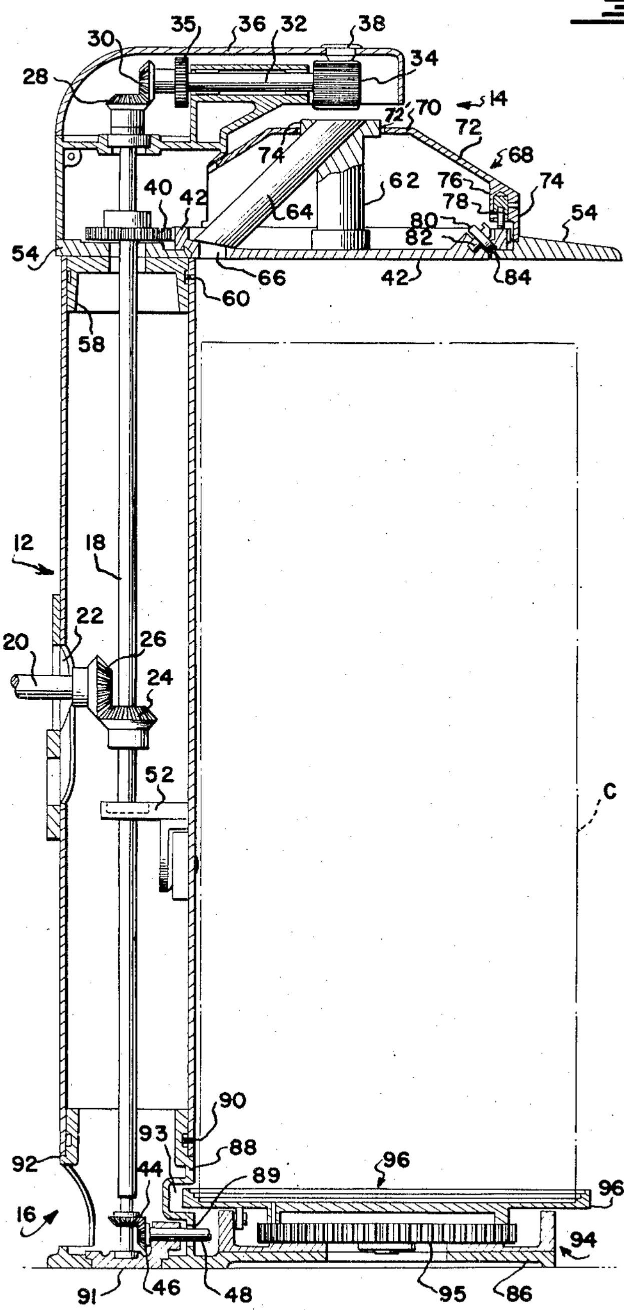
April 29, 1958 H. P. JACKSON 2,832,099

TEXTILE COILER

Filed Oct. 28, 1955 7 Sheets-Sheet 1

FIG. 1.



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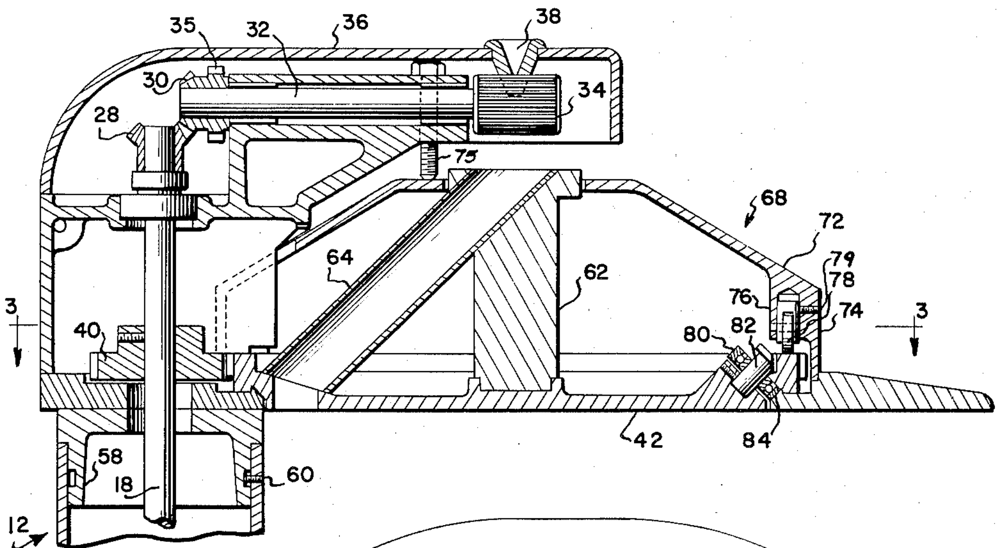
ATTORNEYS

FIG. 2.



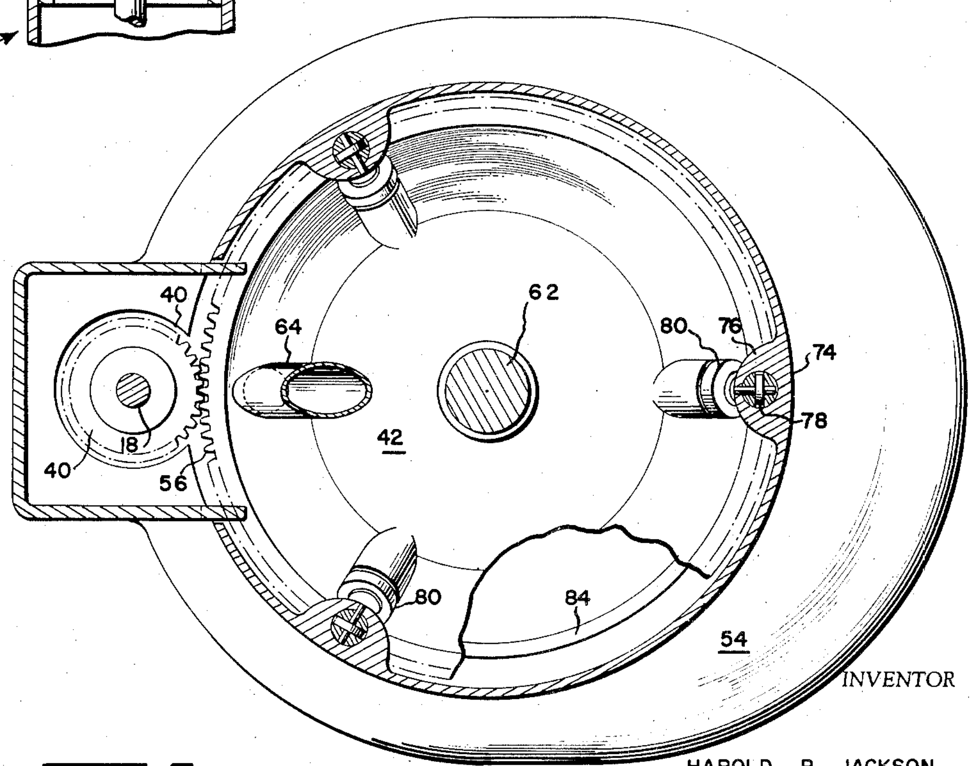


FIG. 3.

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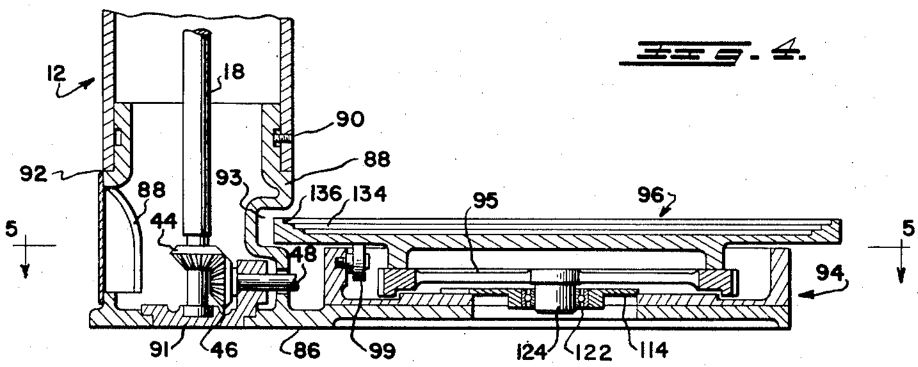

FIG. 4.

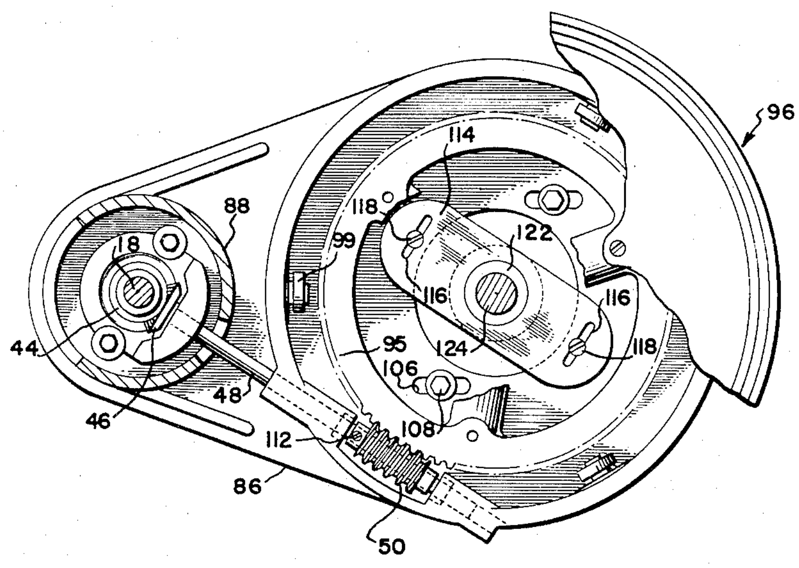

FIG. 5.

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FIG. 8.

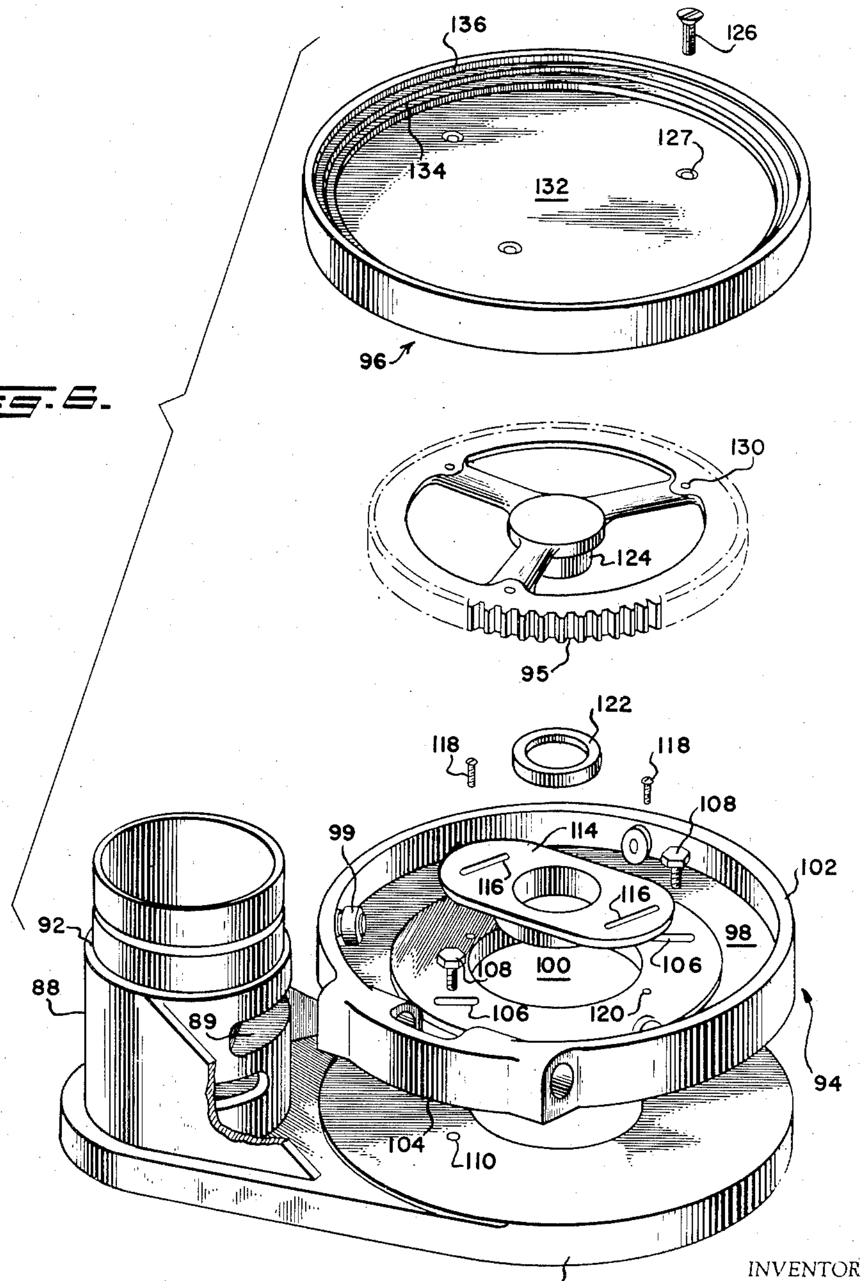

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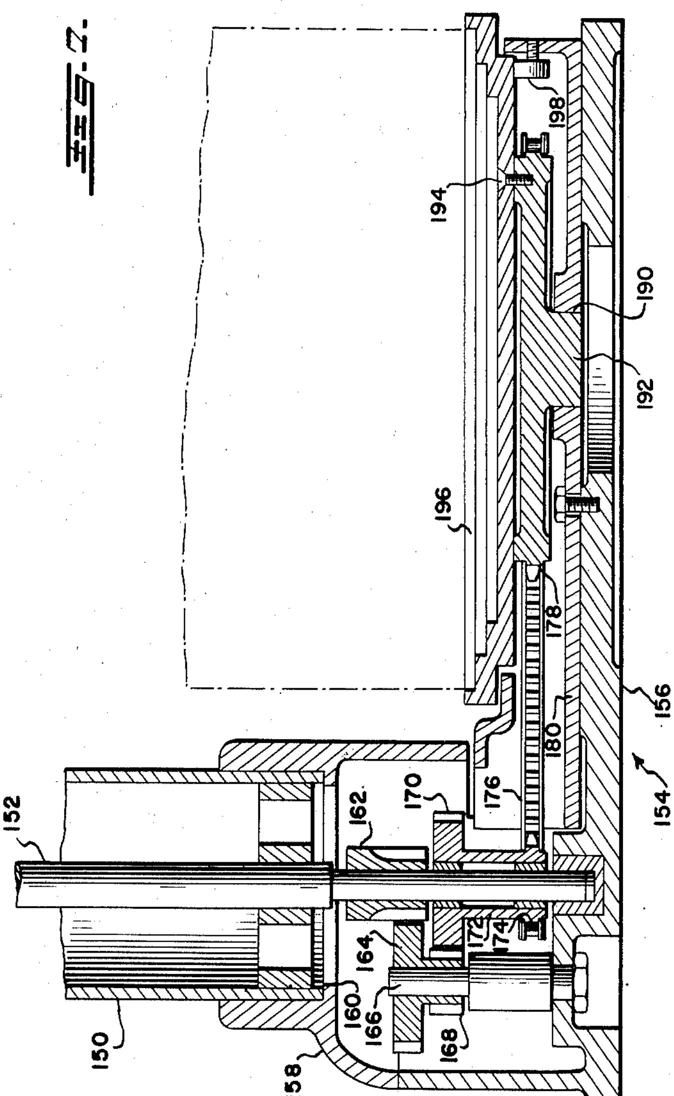
FIG. 7



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TEXTILE COILER

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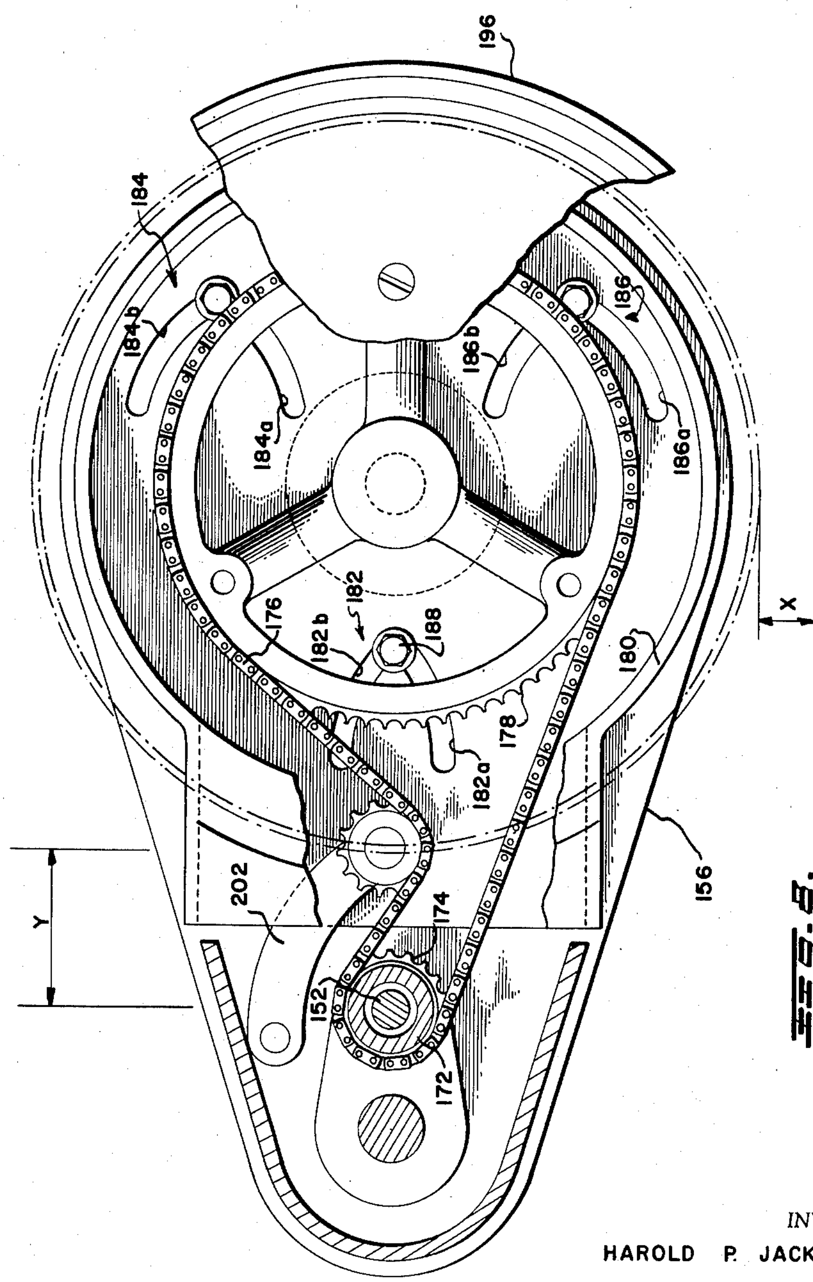

FIG. 8.

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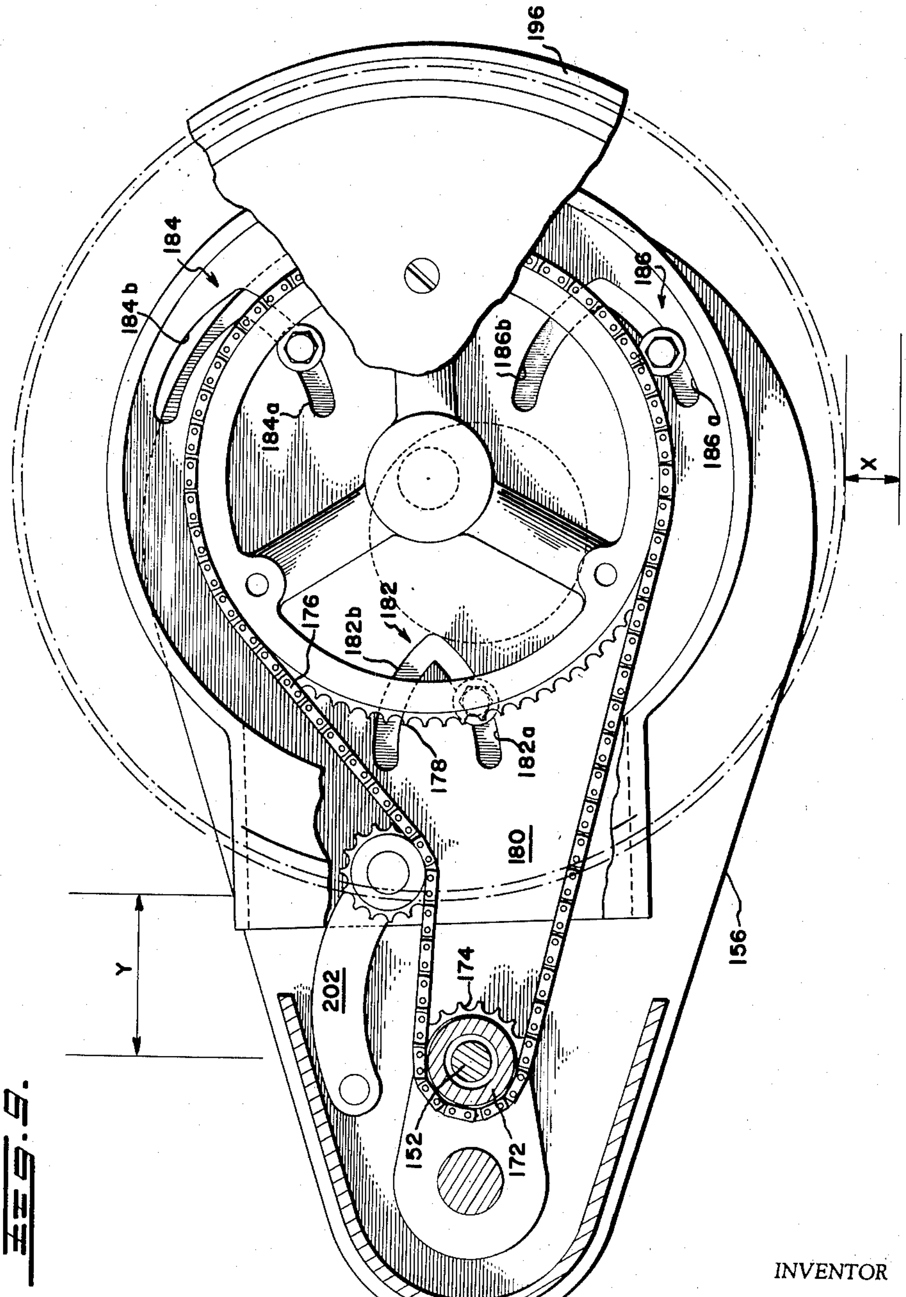

FIG. 9

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2,832,099

TEXTILE COILER

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Application October 28, 1955, Serial No. 543,464

24 Claims. (Cl. 19—159)

This invention relates to an improved coiler machine for laying stock or sliver from a carding, drawing, combing or other machine into a container for transporting to another machine for further processing.

In the textile industry, coiler machines are driven from power take-offs on a carding, drawing, combing or other machine from which a sliver is being drawn. The power take-offs from the carding or other machines are invariably provided with shafts at 90 degrees to the direction of passage of the cotton sliver feeding from the machine, the direction to the take-off being right or left depending on how the carding machine or other source of sliver is to be arranged with respect to the aisle space in the mill. Many of the existing power take-offs in textile mills were originally installed for driving coiler units utilizing cans of relatively small diameter with the result that such power take-off shafts were mounted quite close to the frame of the machine. As a result of these varying conditions, it is frequently necessary to modify existing power take-offs when installing coiler units.

A further problem in connection with the installation of coiler machines is the fact that there is a wide diversity of opinion in the textile industry as to which is the most suitable diameter for the can or container in which the sliver is packed. With coiler units of the prior art, once a choice is made as to the size of can to be accommodated by the coiler, it is either impractical or impossible to later convert to a different size can.

The wide diversity of physical requirements encountered in the installation of coilers, such as left and right hand power take-offs, power take-offs mounted close to the frame of the carding or other machine, and lack of uniformity of can diameters used in different textile mills prevents standardization of coiler equipment and installations and also frequently results in inefficient utilization of aisle space.

Furthermore, most coiler machines of the prior art are relatively fixed in their characteristics, such as the speed ratio of the coiler tube gear to the can table, or the positions of the coiler tube gear and can table relative to each other. As a result, coiler machines of the prior art cannot be adjusted to control the efficiency of the sliver pack in the can, or to make adjustments for providing optimum packing for varying diameters of sliver or varying can diameters.

It is an object of this invention to provide a coiler machine for use in textile mills which is universal in its application and which is adapted to be driven from existing power take-offs without modification of the take-off.

It is another object of this invention to provide a coiler machine which is adjustable to improve the efficiency of the pack of the sliver in the container.

It is still another object of this invention to provide a coiler machine which is easily adaptable to receive containers of various diameters and also to adjust for laying slivers of different diameters.

It is a further object of this invention to provide a coiler machine in which the speed of the can table may be readily changed relative to the speed of the coiler tube gear.

It is a still further object of this invention to provide a coiler machine which may be readily adapted to either a left-hand or right-hand power take-off and in which the coiler may be mounted close to the frame of the carding machine or other machine from which the sliver is being drawn to conserve aisle space.

In achievement of these objectives, there is provided in accordance with this invention a coiler including a hollow vertical column in which is positioned a vertical drive shaft adapted to be driven in geared engagement from the power take-off of a carding machine or the like. At the upper end of the vertical column, the coiler head is mounted and includes a stationary spectacle which supports a rotatable coiler tube gear driven by a gear on the vertical drive shaft. Calender rolls are also driven from the vertical shaft and feed the sliver to the rotating coiler tube. The entire head structure including the spectacle and rotatable tube gear is carried by a male plug member which is received by the upper end of the vertical column in such manner that the entire head assembly may be rotated through 360 degrees of movement with respect to the vertical column to provide angular adjustment of the head with respect to the vertical column. The rotating tube gear is supported by anti-friction roller members which engage an inclined track surface on the inner periphery of the spectacle to support the rotating coiler tube gear with a minimum of friction.

The base of the coiler unit is also attached to a male plug member which is received in the lower end of the vertical column and permits the base to be rotated through an angle of 360 degrees with respect to the vertical column to permit angular adjustment of the base with respect to the column. The base supports a rotatable can table which may be rotated in the same direction or in an opposite direction to the direction of rotation of the coiler tube gear, depending upon the gearing arrangement used.

In one embodiment of the invention, the can table is rigidly secured, as by screws, to the upper surface of a worm gear which is in geared engagement with a worm driven from the lower end of the vertical drive shaft. The worm gear to which the can table is attached is supported for rotation by three circumferentially spaced bearing members mounted on a gear guard carried by the base, the can table being centered for rotation by a center bearing carried by the gear guard. The worm is keyed or splined on a worm shaft supported by the gear guard.

The gear guard which supports the worm and worm gear is supported on the base member and is adjustably movable with respect to the base member to permit changing the distance from the vertical column to the center of rotation of the can table. This adjustment permits the coiler unit to receive different sizes of cans and also permits adjustment of the laying of the sliver into the can. The center bearing for the worm gear is also adjustable along the gear guard to permit different center distances between the worm and worm gear. This permits substitution of different worm gears having different numbers of teeth to thereby change the ratio of the worm gear to the worm, permitting a change in speed of the can table with respect to the rotating tube gear at the upper end of the coiler unit.

In a modified form of the invention, the can table is driven from the main vertical drive shaft through a chain drive connection instead of using a worm and worm gear drive as previously described. In this modified construction, the can table is secured by screws to the upper surface of a rotatable can table sprocket which in turn is supported for rotation by rollers carried by a chain guard member. The chain guard is adjustably mounted on the base to permit changing the distance of the center of rotation of the can table from the vertical column. In the chain drive coiler unit, change in speed of the can table relative to the coiler gear tube is obtained by changing compound gearing which drives the chain sprocket.

Further objects and advantages of the invention will become apparent from the following description taken in conjunction with the accompanying drawings in which:

Fig. 1 is a view in vertical section of a coiler unit in accordance with the invention;

Fig. 2 is an enlarged view in vertical section of the head end of the coiler unit;

Fig. 3 is a view in horizontal section taken along line 3—3 of Fig. 2;

Fig. 4 is an enlarged view in vertical section of the lower end of the coiler unit showing details of the rotatable can table and its driving mechanism;

Fig. 5 is a view in horizontal section along line 5—5 of Fig. 4;

Fig. 6 is an exploded view showing the various components of the lower end of the coiler unit;

Fig. 7 is a view in vertical section of the lower end of the modified coiler unit using a chain drive for driving the can table;

Fig. 8 is a view in horizontal section showing details of the lower end of the coiler base and can table driving mechanism; and

Fig. 9 is a view similar to Fig. 8 but showing the support for the rotatable can table in a different adjusted position than that shown in Fig. 8.

Referring now to the drawings and more particularly to Figs. 1–6, the coiler unit is generally indicated at **10** and includes a hollow vertical column generally indicated at **12** having connected at its upper end a coiler head assembly generally indicated at **14** and having connected at its lower end a coiler base assembly generally indicated at **16** A vertical drive shaft **18** extends vertically for the entire height of hollow column **12** and projects above column **12** into the head assembly **14** and below column **12** into the base assembly **16**. Shaft **18** is driven from a horizontal power take-off shaft **20** which extends through an opening **22** in column **12** substantially at the midpoint of the height of the column **12**. Shaft **20** is driven from a carding or other textile machine with which the coiler unit is being used. Shafts **20** and **18** are connected in driving relation to each other by means of a pair of mating beveled gears **24** and **26** on the respective shafts. At its upper end, vertical shaft **18** is provided with a beveled gear **28** which mates with a similar beveled gear **30** on a horizontally disposed calender roll shaft **32**. At the radially outer end of calender roll shaft **32** is disposed one of a pair of conventional calender rollers **34** which feed sliver from a carding machine or the like to the coiler unit. The other calender roll shaft (not shown) is driven by a gear **35** (Fig. 1) mounted on shaft **32**. A calender roll cover **36** which is pivotally supported with respect to the head assembly **14** covers the calender roll mechanism when in the position shown in Fig. 1. Calender roll cover **36** is provided with a trumpet **38** through which the sliver is fed to calender rollers **34** from the carding or other textile machine, as is well known.

Vertical drive shaft **18** is also provided adjacent its upper end but below beveled gear **28** with a horizontally disposed spur gear **40** which meshes with coiler tube gear **42** as will be described. At its lower end, shaft **18** has mounted thereon a beveled gear **44** which mates with a second beveled gear **46** carried on a horizontally disposed shaft **48** on which is mounted a worm **50** (Fig. 5) which drives a worm wheel to thereby rotate the can table as will be described in more detail hereinafter. Shaft **18** is supported intermediate its height by a bearing **52** carried by column **12**.

The head assembly **14** includes a horizontally disposed stationary spectacle **54** which surrounds and supports coiler gear **42**. Spectacle **54** and the rest of the head assembly are supported by a plug member **58** which is rigidly secured to spectacle **54** and which extends downwardly into the upper end of vertical column **12**. Plug **58** and the coiler head assembly carried thereby may be rotated in a horizontal plane through an angle of 360 degrees with respect to column **12** to permit positioning the head assembly **14** at any desired angular position with respect to column **12**. A set screw **60** extends through the wall of column **12** and engages plug **58** to retain the plug and, consequently, head assembly **14** in any position to which they may have been adjusted with respect to column **12**.

Coiler gear **42** is a disk-like member provided on its outer periphery with gear teeth **56** (Fig. 3) which mesh with the teeth of spur gear **40** on shaft **18**. The engagement of teeth **56** of coiler gear **42** with the teeth of spur gear **40** causes the coiler gear to be rotated with respect to spectacle **54**. A coiler gear spindle **62** is fixed to and extends upwardly from the center of the upper surface of coiler gear **42**. A coiler tube **64** extends angularly through the upper end of spindle **62** to adjacent the outer pheriphery of gear **42** where it communicates with a passage **66** in the coiler gear. The sliver which is being laid into the can C passes from the carding machine or other machine from which the sliver is being obtained, through trumpet **38**, through calender rolls **34**, through coiler tube **64** and passage **66** in coiler gear **42** and thence into container or can C.

A coiler gear cover generally indicated at **68** is also supported by and is stationary with respect to spectacle **54**. Coiler gear cover **68** includes a flat top portion **70** which is centrally apertured at **72** to surround a circular enlargement **74** at the upper end of spindle **62** on coiler gear **42**. Coiler gear cover **68** includes a downwardly extending cone-shaped portion **72** which extends downwardly from the radially outer extreme of top flat portion **70** and which terminates in a vertical wall portion **74**. The lower edge of wall portion **74** rests on a countersunk lip or ledge provided in the upper surface of spectacle **54**. Coiler gear cover **68** is held in a downward position by a hold-down screw **75** which passes through the calender roll housing and seats on the upper surface of tube gear cover **68**.

Extending inwardly from the vertical wall portion **74** of coiler gear cover **68** at suitable intervals are enlarged vertical wall portions **76** best seen in Fig. 3 which terminate at a height a short distance above the upper surface of the outer rim of tube gear **42**. Roller members **78**, which may be referred to as anti-friction means, are supported for rotation in sockets provided in each of the inwardly extending wall portions **76**, the lower surface of each of the rollers **78** riding the upper surface of the rim of tube gear **42**. The rollers are vertically adjustable and are locked in place by means of a set screw **79** provided in the tube gear cover for locking each roller at the proper height after the desired clearance is obtained. Rollers **78** serve as a hold-down means for gear **42**, the rollers at the same time providing a rolling friction between stationary cover **68** and rotating tube gear **42**.

Tube gear **42** is itself supported with respect to spectacle **54** by rollers **80**, which may be referred to as anti-friction means, which are carried by gear **42** at spaced intervals. For this purpose, gear **42** is provided at suitable intervals, such as 120-degree intervals, for example, with radially outwardly inclined apertures, and rollers **80** are mounted on stub axles **82** which are inclined at a substantially 45-degree angle with respect to the horizontal plane of gear **42**. Rollers **80** extend through the inclined apertures in the gear tube into rolling engagement with the stationary spectacle. The spectacle 54 is provided on its inner rim with an inclined surface 84 (Figs. 1, 2 and 3) which serves as a bearing for the rollers 80 and for the coiler gear **42**. The bearing structure just described including the use of rollers **80** engaging spectacle 54 maintains the rotating tube gear concentric with the spectacle opening at all times and maintains a uniform annular clearance between the tube gear and the spectacle.

The base portion 16 of the coiler unit includes a base plate member 86 which extends in a horizontal plane and which is rigidly connected to a vertically extending plug member 88 which is received in the lower end of vertical column 12. Base **86** and the attached plug 88 may be rotated through an angle of 360 degrees with respect to column 12 to provide any desired angular relation of the base member to column 12. After base 86 has been adjusted to the desired angular position, set screws 90 which extend through the lower end of column 12 are tightened with respect to plug **88** to thereby hold base 86 and plug **88** in the desired adjusted position. Plug 88 includes a circular ledge portion 92 on which the lower end of column **12** rests. Shaft **48** on which worm 50 is keyed or splined extends through a slotted opening 89 in plug 88. At its radially inner end shaft 48 is supported within plug **88** by a yoke **91** which is angularly adjustable with respect to base **86** and plug 88. Slot 89 extends circumferentially for an arc sufficient to accommodate any regular movement of shaft 48 with respect to base **86** and plug **88** which occurs during the radial adjustment of the gear guard to be hereinafter described.

The base assembly includes a gear guard member generally indicated at 94 and adjustably positioned on base 86, a worm gear 95 supported by gear guard **94**, and a can table 96 which is attached to and rotates with worm gear 95. As will best be seen in Fig. 6, gear guard 94 is a generally circular disk-shaped member having a base portion 98 which is apertured at its center as indicated at 100 and a vertical flange portion **102** which extends upwardly a short distance above the plane of base 98. The vertical flange portion **102** of gear guard 94 is provided at one of its portions with a bearing 104 for the shaft 48 on which worm **50** is removably splined or keyed.

An important feature of the coiler construction is the fact that the position of gear guard **94**, and hence the axis of rotation of can table **96**, may be adjusted with respect to vertical column **12** due to the provision of slots 106 in the base portion 98 of gear guard **94**. Slots 106 extend in a direction radially with respect to column 12 to thereby permit gear guard **94** to be adjusted radially toward or away from column **12**. When the desired spacing of gear guard **94** has been obtained with respect to column 12, screws **108** are passed through slots 106 of guard 94 and into apertures **110** in the surface of base member 86 to thereby hold gear guard 94 in a fixed position relative to base **86**.

In order to permit the adjusting movement of gear guard 94 with respect to base 86 just described, worm 50 may be loosened with respect to shaft **48** on which it is positioned by loosening set screw **112** (Fig. 5) which secures worm 50 to shaft 48. This permits a relative movement of worm 50 with respect to shaft 48 while gear guard 94 is being adjusted relative to base **86**. After the adjustment of gear guard **94** has been completed, set screw **112** may then be tightened to again rigidly secure worm **50** to shaft **48**. The provision of arcuate slot 89 in plug **88**, previously mentioned, permits a limited angular movement of shaft **48** with respect to base **86** during the radial adjustment of gear guard **94**.

An adjustable bearing plate **114** is fastened to the base portion 98 of gear guard **94** for centering worm gear 95 which mates with worm **50**. Bearing plate **114** is provided at its diametrically opposite portions with slots **116** which preferably extend in a direction substantially perpendicular to the axis of bearing **104** for worm 50. Bearing plate 114 is secured to gear guard 94 by screws 118 which extend through slots **116** and into apertures 120 provided in base portion **98** of the gear guard **94** and it is thus apparent that when gear guard 94 is adjusted radially toward or away from vertical column 12, bearing plate **114** is also adjusted radially toward or away from vertical column **12**. A bearing 122 (Fig. 6) is received in a central aperture of bearing plate 114 to receive the downwardly extending shaft or shank portion **124** of worm gear **95**. The provision of the adjustable bearing plate **114** permits worm gears 95 of different diameters to be received within gear guard 94 to mate with worm **50**. This is due to the fact that the adjustable bearing plate **114** permits variation of the center distance of bearing **122** with respect to worm 50, thereby permitting worm gears **95** of different diameters and having different numbers of teeth to be interchangeably received in mating relation to worm 50. This permits changing the ratio of worm gear 95 with respect to worm **50** to thereby vary the rate of rotation of worm gear **95** and consequently the rate of rotation of the can table carried by the gear. This is an important advantage since it permits changing the speed of rotation of can C to provide optimum speeds of rotation of the can for different diameters of sliver and different diameters of cans.

Can table 96 is secured to worm gear **95** by three symmetrically arranged flat head screws **126** which pass through countersunk apertures 127 in the can table and are received in drilled and screw-threaded holes **130** in worm gear 95. The can table is a disk-like member having a base portion 132 and a plurality of circular ledges at its outer rim such as those indicated at **134** and 136 which are successively positioned radially outwardly of each other and raised slightly above each other. The plurality of successively raised and radially displaced ledges 134 and **136** permit the can table 96 to accommodate cans C of different diameters. Vertically extending plug 88 is recessed as indicated at **93** (Fig. 1) to receive the outer rim of can table 96 when the can table is at its radially innermost adjusted position.

Can table 96 rotates with worm gear 95. Gear guard 94 has a plurality of circumferentially spaced roller members 99 (Figs. 4, 5, 6) which support the underneath surface of the can table with rolling or sliding friction. The load of the can table 96 and gear **95** is carried by rollers 99 rather than by the center bearing member. The center bearing serves only to locate the center of the worm gear 95 and hence the axis of rotation of can table 96. The rollers **99** used for supporting can table 96 with rolling friction can be replaced by buttons or bosses which would support the can table with sliding friction.

There is shown in Figs. 7, 8 and 9 a modified form of coiler unit having a modified type of base assembly which utilizes a chain drive for driving the rotatable can tabe instead of the worm and worm gear of the embodiment previously described.

Referring now to Figs. 7, 8 and 9, the modified embodiment includes a hollow vertical column **150** through which extends a vertical shaft 152. A base assembly generally indicated at 154 includes a horizontal base portion 156 to which is connected a hollow vertical portion 158. Vertical portion 158 has an inwardly projecting annular flange **160** which serves as a bearing for the lower end of column **150**. Base **154** including portion 158 may be rotated through an angle of 360 degrees with respect to column 150 to provide any desired angular position of the base with respect to the column.

Rigidly fixed to the lower portion of shaft 152 where it projects into the base portion 158 is a gear 162 which meshes with a gear 164 carried at the upper end of a short vertically extending stub shaft 166 carried by base 156. Gear 164 is free to turn on shaft 166. A second gear 168 is rigidly attached to or integral with gear 164 below gear 164 and meshes with a gear 170 which is freely rotatable on the lower portion of shaft 152 below gear 162. Gear 170 has a hub portion 172 extending downwardly therefrom and a sprocket 174 is fixed to the lower end of hub 172 and turns with gear 170. The speed of rotation of sprocket 174 may be varied by substituting suitable combinations of gears 162, 164, 168 and 170.

A chain 176 meshes with sprocket 174 to drive a can table sprocket 178. A chain guard 180, which is a flat, generally disk-shaped member, is adjustably supported on the upper surface of horizontal base portion 156. Chain guard 180 may be adjusted relative to base portion 156 due to the provision of V-shaped arcuate slots generally indicated at 182, 184 and 186 (Figs. 8 and 9). A screw 188 passes through each of the V-shaped slots 182, 184 and 186 and into a fixed aperture in base portion 156. Each slot comprises an *a* arm and a *b* arm. Chain guard 180 may be adjusted radially with respect to the central vertical axis of column 150 by sliding chain guard 180 along base portion 156 to the desired position and then securing the chain guard to the base by means of screws 188 passing through the respective slots. The inclination of slots 182, 184 and 186 is such that the same spacing is maintained between the vertical column and can C (Y distance in Figs. 8 and 9) and between the apron and can C (X distance in Figs. 8 and 9) for different sizes of cans, such as 14-, 15- or 16-inch diameter cans. For right-hand power take-offs, the chain guard 180 is moved along the *a* arm of its slots, while for left-hand power take-offs, the chain guard is moved along the *b* arms of its slots.

Fig. 8 shows the position of the chain guard 180 when a small can is supported by can table sprocket 178 and chain guard 180. The chain guard has been moved inwardly until screws 188 are located at the apex of each V-shaped slot 182, 184, 186. In Fig. 9, the chain guard 180 has been moved along the *a* arms of the slots to accommodate a larger diameter can, the coiler unit being driven from a right-hand power take-off. It will be noted that the X and Y distances between the can and the card apron and between the can and the vertical column remain the same for both small and large cans although, of course, the spacing between the axis of rotation of the can table and the vertical column is different for small and large cans.

Chain guard 180 has a bearing socket 190 which receives a hub or shaft 192 extending downwardly from the underneath surface of can table sprocket 178, to thereby support the can table sprocket for rotation. Can table 196 is rigidly attached to the upper surface of sprocket 178 by three symmetrically spaced screws 194. The load of can table 196 and sprocket 178 is supported by rollers 198 carried by chain guard 180, thereby causing can table 196 to rotate with can table sprocket 178. In order to insure that chain 176 is maintained under constant tension in any of the various positions to which chain guard 180 may be adjusted, a suitable spring-biased tensioning device 202 of any suitable type is employed and is pivotally supported by base 154.

The can table support arrangement disclosed for use with the chain drive may also be used for the gear drive construction shown in Figs. 1–6. This is accomplished by providing gear guard 94 with arcuate slots similar to the V-shaped slots 182, 184, and 186 of Figs. 7 and 8. Sufficient adjustability of the can table support for many purposes may be obtained using a non-swiveling base but providing V-shaped slots such as 182, 184, and 186 to permit movement of the gear guard or sprocket guard relative to the base. In such case, the coiler head need not be adjustable through an angle of 360 degrees but should be angularly adjustable in a horizontal plane through an angle sufficient to permit the coiler head to follow adjustments of the can table along the V-shaped slots.

It can be seen from the foregoing that there is provided in accordance with this invention a coiler unit which is adaptable for use under many varying conditions which may be encountered in different textile mills and is therefore of universal application. The head assembly and each of the base assemblies described are adjustably rotatable through an angle of 360 degrees with respect to the vertical column of the coiler unit to thereby permit adjustment of the head and base assemblies to meet varying installation conditions which may be encountered. For example, this permits the coiler unit to be adapted for use with either left-hand or right-hand power take-offs from the carding machine or other textile machine with which the coiler unit is being used. Also, the head assembly is so constructed that the coiler tube gear of the head assembly is supported for rotation with a minimum of friction with respect to the stationary spectacle.

Also, the can table support for each of the coiler units is radially adjustable with respect to the vertical drive shaft column to permit the can table to be supported for rotation at different radial distances from the vertical column. This is an important adjustment since it permits the can table to be shifted to better accommodate various diameters of cans and also to improve the quality of the pack of the sliver.

Furthermore, in the embodiment utilizing the worm and worm gear drive to the can table, the adjustability of the bearing for the worm gear with respect to the worm permits variation of the center distance between the worm and worm gear thereby permitting use of different size gears with the same worm. This permits a change in the speed ratio of the worm gear with respect to the worm to thereby obtain different rates of speed for varying diameters of sliver and for varying can diameters. This same speed adjustment can be made by changing the compound gearing which drives the chain sprocket in the other embodiment of the invention. The various adjustment features of the base permit adjustment of the base to obtain optimum conditions of laying of the sliver to thereby improve the quality of the pack of sliver in the can as well as the weight of sliver which can be packed in a can of a given volume. Thus, the adjustability features of the coiler unit permit maximum efficiency of operation and also permit the coiler unit to be adapted to various physical conditions in the textile plant in which it is being used.

While there have been shown and described particular embodiments of the invention, it will be obvious to those skilled in the art that various changes and modifications may be made therein without departing from the invention and, therefore, it is aimed to cover all such changes and modifications as fall within the true spirit and scope of the invention.

What I claim as my invention is:

1. A coiler for laying sliver in a container comprising a vertical column, a support member carried by said column adjacent the upper end thereof, a coiler tube gear supported for rotation by said support members, means for angularly adjusting said support member and said tube gear in a horizontal plane relative to said vertical column, a second support member connected to said column adjacent the lower end thereof, a can table rotatably sup-

ported by said second support member, and means for angularly adjusting said second support member and said can table in a horizontal plane with respect to said column.

2. A coiler for laying sliver in a container comprising a vertical column, a vertical drive shaft extending through said column, means for connecting said drive shaft to a source of power, a support member carried by said column adjacent the upper end thereof, a coiler tube gear supported for rotation by said support, means for angularly adjusting said support and said tube gear in a horizontal plane relative to said column, a second support connected to said column adjacent the lower end thereof, a can table rotatably supported by said second support, and means for angularly adjusting said second support and said can table in a horizontal plane with respect to said column.

3. A coiler for laying sliver in a container comprising a vertical column, a vertical drive shaft extending through said column, a spectacle supported by the upper portion of said column and angularly adjustable in a horizontal plane relative to said column, a coiler tube gear supported for rotation by said spectacle and driven from said vertical drive shaft, a base member connected to said column adjacent the lower end of said column, means for rotatably supporting a can table on said base member, and means for angularly adjusting said base member in a horizontal plane relative to said column.

4. A coiler for laying sliver in a container comprising a vertical column, a drive shaft disposed vertically in said column, a coiler tube gear supported for rotation by said column adjacent the upper end of said column, said tube gear being angularly adjustable in a horizontal plane relative to said column, a base member connected to the lower end of said column, a can table support supported for rotation by said base member, means for rotatably driving said can table support from said vertical shaft, means for angularly adjusting said base member in a horizontal plane relative to said column, and means for radially adjusting the axis of rotation of said can table support with respect to said vertical shaft.

5. A coiler for laying sliver in a container comprising a vertical column, a vertical drive shaft extending through said column, a coiler tube gear supported for rotation adjacent the upper end of said column, a base member connected to said column adjacent the lower end of said column, a can table supported for rotation on said base member, means for angularly adjusting said base member in a horizontal plane relative to said column, and means for adjusting the radial distance between said column and the axis of rotation of said can table.

6. A coiler for laying sliver in a container comprising a vertical column, a vertical drive shaft extending through said column, a coiler tube gear supported for rotation adjacent the upper end of said column, a base member connected to said column adjacent the lower end of said column, a can table rotatably supported by said base member, a worm member driven by said vertical shaft adjacent said base member, a worm gear in geared engagement with said worm member, said worm gear being in driving engagement with said can table, and means for interchangeably supporting worm gears of different diameters in engagement with said worm member to provide a change in speed of rotation of said can table.

7. A coiler for laying sliver in a container comprising a vertical column, a vertical drive shaft extending through said column, a coiler tube gear supported for rotation adjacent the upper end of said column, a base member connected to said column adjacent the lower end of said column, a can table rotatably supported by said base member, a worm member driven by said vertical shaft adjacent said base member, a worm gear in geared engagement with said worm member, said worm gear being in driving engagement with said can table, a bearing support for said worm gear, and means for shifting the spacing between said bearing support and said worm member to permit interchanging worm gears of different diameters in engagement with said worm member to provide a change in speed of rotation of said can table.

8. A coiler for laying sliver in a container comprising a vertical column, a vertical drive shaft extending through said column, a coiler tube gear supported for rotation adjacent the upper end of said column, a base member connected to said column adjacent the lower end of said column, a gear guard supported by said base member, a worm gear member supported for rotation by said gear guard, means for adjusting the position of said gear guard on said base member to adjust the spacing of the axis of rotation of said worm gear member from said vertical column, a worm member driven from said drive shaft and in geared engagement with said worm gear, and means for adjusting the spacing of said worm member from said drive shaft to compensate for adjustments in the position of said gear guard.

9. A coiler for laying sliver in a container comprising a vertical column, a vertical drive shaft extending through said column, a stationary spectacle supported at the upper end of said column, said spectacle including a circular ledge having an inclined surface, a tube gear driven by said vertical shaft, and a plurality of inclined roller members carried by said tube gear and engaging the inclined surface of said spectacle ledge whereby said tube gear is supported for rotation on said spectacle.

10. A coiler for laying sliver in a container comprising a vertical column, a vertical drive shaft extending through said column, a stationary spectacle supported at the upper end of said column, a substantially horizontal tube gear driven by said vertical shaft, said tube gear having a substantially horizontal surface adjacent its outer periphery, roller members carried by said tube gear and engaging said spectacle whereby said tube gear is supported for rotation on said spectacle, a stationary cover for said tube gear disposed above said tube gear and supported by said spectacle, and roller means on said cover engaging said substantially horizontal tube gear upper surface and preventing displacement of said tube gear upwardly with respect to said spectacle.

11. A coiler for laying sliver in a container comprising a vertical column, a vertical drive shaft extending through said column, a stationary spectacle supported at the upper end of said column, said spectacle including a circular ledge having an inclind surface, a tube gear driven by said vertical shaft, said tube gear having a substantially horizontal upper surface adjacent its periphery, a plurality of inclined, roller members carried by said tube gear and engaging the inclined surface of said spectacle ledge whereby said tube gear is supported for rotation on said spectacle, a stationary cover for said tube gear disposed above said tube gear and supported by said spectacle, and roller means on said cover engaging said substantially horizontal upper surface of said tube gear and preventing displacement of said tube gear upwardly with respect to said spectacle.

12. A coiler for laying sliver in a container comprising a vertical column, a vertical drive shaft extending through said column, a coiler tube gear supported for rotation adjacent the upper end of said column, a base member connected to said column adjacent the lower end of said colmun, a can table sprocket supported for rotation with respect to said base member, a can table driven by said can table sprocket, a chain drive connection between said can table sprocket and said drive shaft, means for angularly adjusting said base member in a horizontal plane relative to said column, and means for changing the spacing between the center of rotation of said can table sprocket and said column.

13. A coiler for laying sliver in a container comprising a vertical column, a vertical drive shaft extending through said column, a coiler tube gear supported for rotation adjacent the upper end of said column, a base member

connected to said column adjacent the lower end of said column, a chain guard member positioned on said base member, means for adjusting the position of said chain guard member relative to said base member, a can table sprocket supported for rotation with respect to said chain guard member, a can table supported on said chain guard member and driven by said can table sprocket, and a chain drive connection between said can table sprocket and said drive shaft.

14. In a coiler for laying sliver in a container, a vertical column, a stationary spectacle supported at the upper end of said column, a substantially horizontal tube gear supported by said spectacle for rotation with respect to said spectacle, said tube gear having a substantially horizontal upper surface adjacent its outer periphery, a stationary cover for said tube gear disposed above said tube gear and supported by said spectacle, and a plurality of roller members carried by said cover and engaging said upper horizontal surface of said tube gear to prevent upward vertical displacement of said tube gear with respect to said spectacle, each roller member being supported for rotation about an axis which is adjustable vertically with respect to said upper horizontal surface of said tube gear whereby said roller members can be adjusted for contact with said upper surface of said tube gear.

15. A coiler for laying sliver in a container comprising a vertical column, a vertical drive shaft extending through said column, a coiler tube gear supported for rotation adjacent the upper end of said column, a base member connected to said column adjacent the lower end of said column, said base member being angularly adjustable in a horizontal plane relative to said column, a can table sprocket supported for rotation with respect to said base member, a can table driven by said can table sprocket, a chain drive connection between said can table sprocket and said drive shaft, and a shiftable bearing member for said can table sprocket including a plurality of slots each adapted to receive a connecting member for holding said bearing member in position with respect to said base member, said slots being oriented with respect to said column so that the spacing between the center of rotation of said can table sprocket and said column can be changed.

16. A coiler according to claim 15 in which each of said slots is V-shaped , and said V-shaped slots are oriented with respect to said column so that the spacing between the center of rotation of said can table sprocket and said column can be changed to accommodate a right-hand power take-off drive for said coiler or a left-hand power take-off drive for said coiler.

17. A coiler for laying sliver in a container comprising a vertical column, a vertical drive shaft, a coiler tube gear supported for rotation adjacent the upper end of said column, a base member, means swivelly connecting said base member to said column adjacent the lower end of said column to permit said base member to turn in a horizontal plane about said column as an axis, an upstanding flange member supported on said base member, said flange member having a curved inner surface, a plurality of anti-friction members extending from said curved inner surface, a can table resting upon said anti-friction members, a can table drive member attached to the undersurface of said can table, and can table drive means connecting said can table drive member to said vertical drive shaft.

18. A coiler according to claim 17, wherein said coiler tube gear support may be turned angularly in a horizontal plane about the vertical axis of said vertical column.

19. A coiler for laying sliver in a container comprising a vertical column, a vertical drive shaft extending through said column, a spectacle supported by the upper portion of said column and angularly adjustable in a horizontal plane relative to said column, a coiler tube gear supported for rotation by said spectacle and driven from said vertical drive shaft, a base member swivelly connected to said column adjacent the lower end of said column, a vertical flange member supported on said base member, said flange member having a curved inner surface, a plurality of rollers extending from said curved inner surface, a can table resting upon said rollers, a can table drive member attached to the undersurface of said can table, a shiftable bearing member for said can table drive member, means connecting said bearing member with respect to said base member so that the spacing between the center of rotation of said can table drive member and said vertical column can be changed, and can table drive means connecting said can table drive member to said vertical drive shaft.

20. A coiler for laying sliver in a container comprising a vertical column, a vertical drive shaft extending through said column, a coiler tube gear supported for rotation adjacent the upper end of said column, a base member, a can table supported for rotation on said base member, and means swivelly connecting said base member to said column adjacent the lower end of said column to permit said base member to turn in a horizontal plane about said column as an axis, said connecting means including means to prevent said base member from turning with respect to said column whereby said base member may be moved to a desired position with respect to said column and may then be held in said desired position.

21. A coiler for laying sliver in a container comprising a vertical column, a vertical drive shaft, a coiler tube gear supported for rotation adjacent the upper end of said column, a base member connected to said column adjacent the lower end of said column, an upstanding flange member supported on said base member, said flange member having a curved inner surface, a plurality of anti-friction members extending from said curved inner surface, a can table resting upon said anti-friction members, a can table drive member attached to the undersurface of said can table, a shiftable bearing member for said can table drive member, means connecting said shiftable bearing member with respect to said base member to permit the spacing between the center of rotation of said can table drive member and said column to be changed, and can table drive means connecting said can table drive member to said vertical drive shaft.

22. A coiler for laying sliver in a container comprising a vertical column, a vertical drive shaft extending lengthwise with respect to said column, a spectacle supported at the upper end of said column, a tube gear driven by said vertical shaft, said tube gear having a substantially horizontal upper surface adjacent its outer periphery, anti-friction means on said tube gear engaging said spectacle and supporting said tube gear for rotation with respect to said spectacle, and anti-friction means positioned above said substantially horizontal upper surface of said tube gear and engageable with said upper surface to prevent displacement of said tube gear upwardly with respect to said spectacle.

23. A coiler for laying sliver in a container comprising a vertical column, a vertical drive shaft extending lengthwise of said column, a coiler tube gear supported for rotation adjacent the upper end of said column, a base member, means connecting said base member to said column adjacent the lower end of said column to permit said base member to be adjusted angularly about said column as an axis, a rotatable can table, a can table drive member located beneath said can table, can table drive means connecting said can table drive member to said vertical drive shaft, shaft means located below said can table and extending axially downwardly with respect to said can table, and shiftable bearing means on said base member receiving said downwardly extending shaft means to locate the axis of rotation of said can table with respect to said vertical column, said shiftable bearing means including a plurality of slots each adapted to receive a connecting member for holding said bearing means in position with respect to said base member, said slots being

oriented with respect to said column so that the spacing between the axis of rotation of said can table and said column can be changed.

24. A coiler for laying sliver in a container comprising a vertical column, a vertical drive shaft extending lengthwise of said column, a coiler tube gear supported for rotation adjacent the upper end of said column, said tube gear support being adjustable angularly about said column as an axis, a base member, means connecting said base member to said column adjacent the lower end of said column to permit said base member to be adjusted angularly about said column as an axis, a rotatable can table, driven gear means attached to the undersurface of said can table, a driving gear engaging said driven gear means, means connecting said driving gear to said vertical drive shaft to rotate said can table in response to rotation of said vertical drive shaft, shaft means located below said can table and extending axially downwardly with respect to said can table, and bearing means on said base member receiving said downwardly extending shaft means to locate the axis of rotation of said can table with respect to said vertical column, said bearing means being shiftable with respect to the vertical column to permit the spacing between the axis of rotation of said can table and said vertical column to be changed.

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