March 20, 1956 J. R. WHITEHURST 2,738,555

EVENER PRESSURE MEANS FOR DRAFTING MECHANISMS

Filed March 11, 1953 2 Sheets-Sheet 1

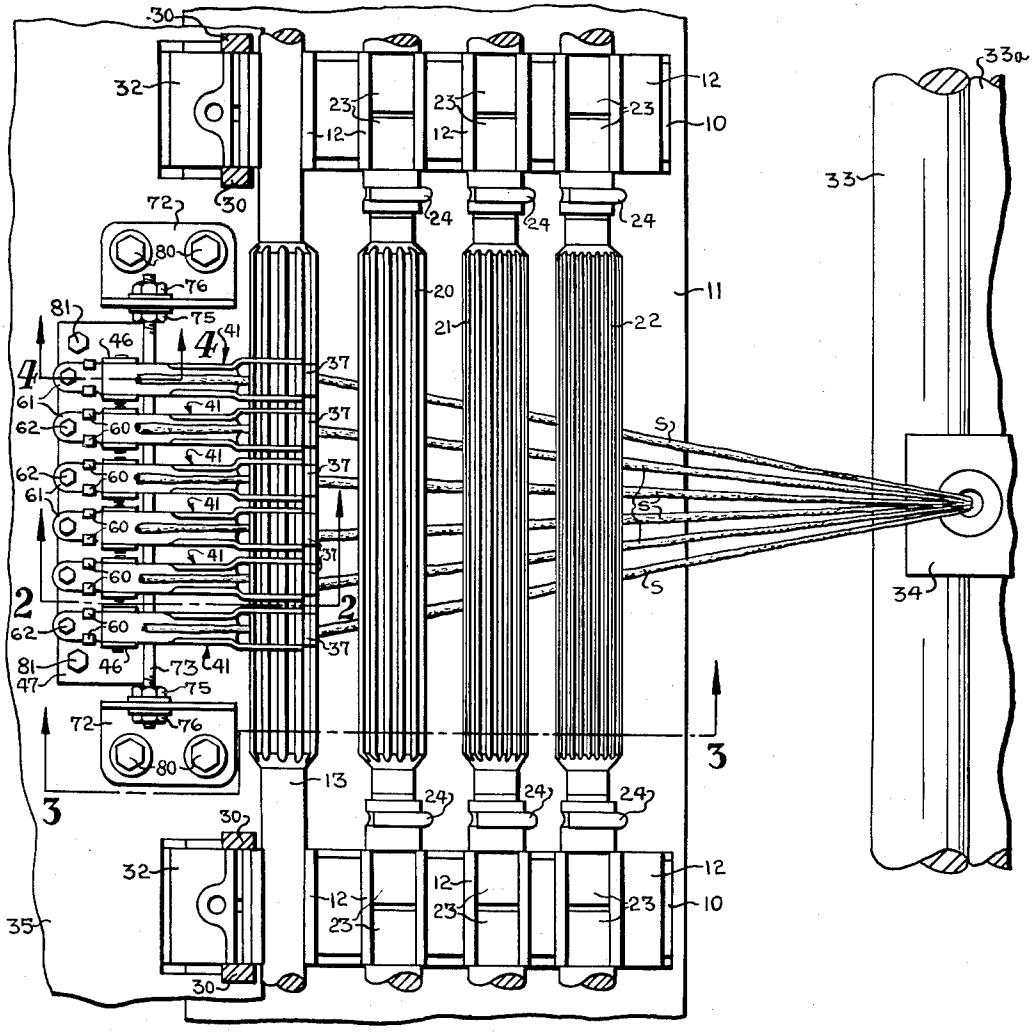


Fig-1

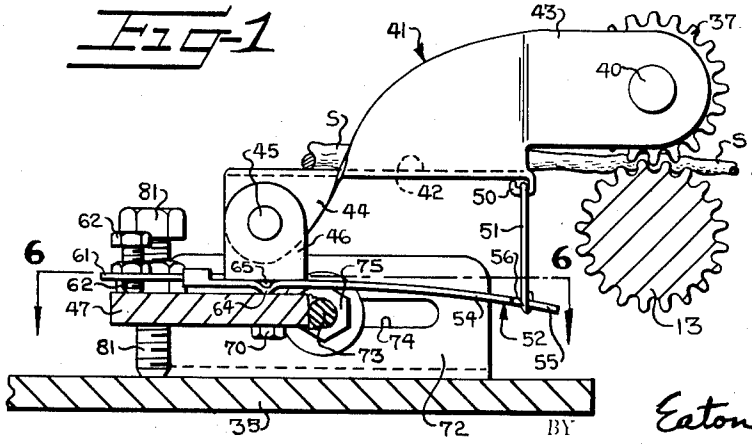


Fig-2

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EVENER PRESSURE MEANS FOR DRAFTING MECHANISMS

Filed March 11, 1953 2 Sheets-Sheet 2

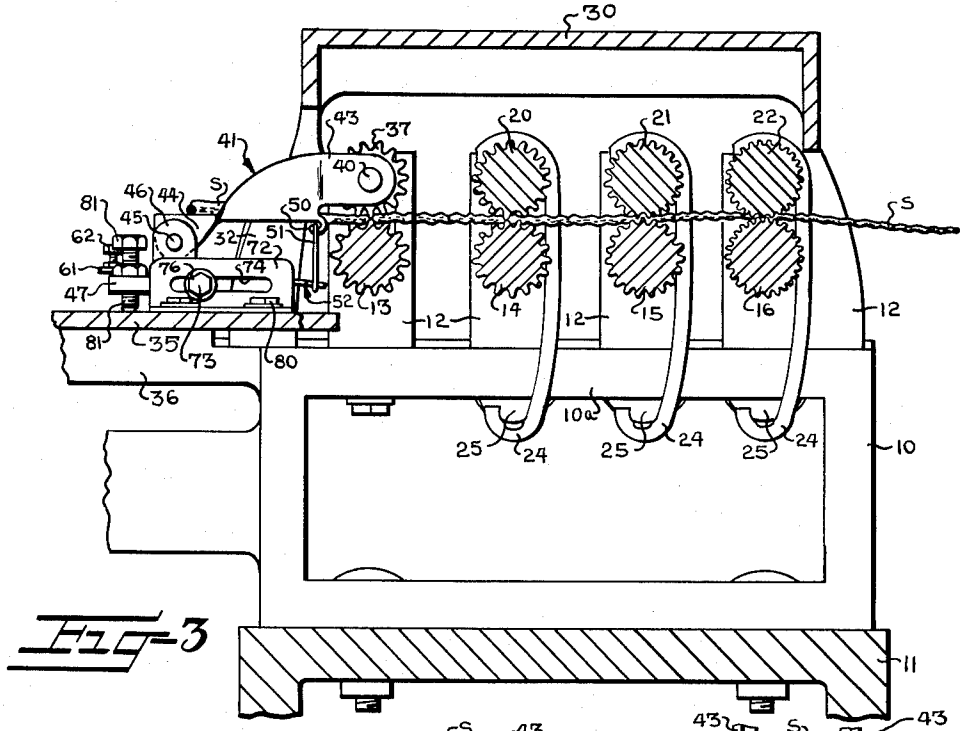


Fig-3

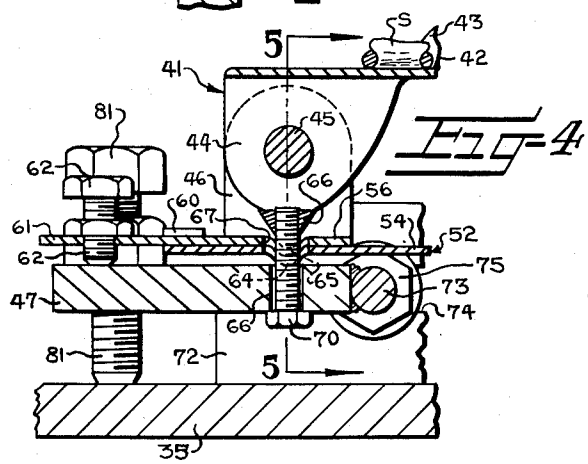


Fig-4

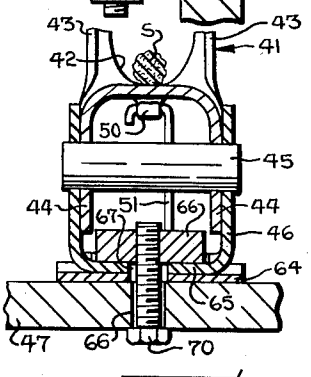


Fig-5

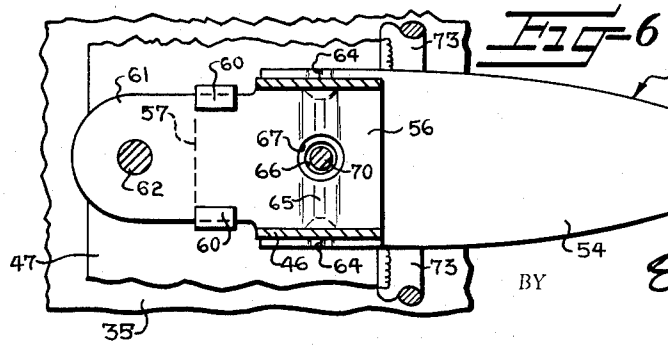


Fig-6

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2,738,555

EVENER PRESSURE MEANS FOR DRAFTING MECHANISMS

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Application March 11, 1953, Serial No. 341,634

11 Claims. (Cl. 19—135)

This invention relates to apparatus for drawing or drafting textile strands such as roving or sliver and, more especially, to an improved means for mounting, and applying pressure to, individual evener rolls positioned upon a common feed roll of the type associated with drawing frames, spinning frames, roving frames and the like.

This application is a continuation-in-part of, and the invention contemplates improvements in the apparatus disclosed in, my co-pending application entitled Evener for Drafting Mechanisms and Method, Serial No. 320,498, and filed November 14, 1952.

In said co-pending application a plurality of substantially axially aligned and relatively narrow fluted evener rolls are provided in lieu of the conventional top feed roll of each roll section of a textile strand drafting machine. These top evener rolls rest upon, and in intermeshing engagement with, the common bottom feed roll for directing strands of roving, sliver and the like to the intermediate drafting rolls, these evener rolls being so arranged that a single strand passes between each of the evener rolls and the common bottom roll, in its course to the intermediate and delivery drafting rolls. Also, in said co-pending application I have provided independent means for applying downward pressure to each of the evener rolls to cause them to bear against the common bottom feed roll under pressure.

It is the primary object of this invention to provide an improved means for applying downward pressure to the evener rolls of an apparatus of the character described wherein means are provided to either individually or collectively vary the amount of downward pressure effected in the evener rolls by the pressure applying means.

As disclosed in said co-pending application, each of the evener rolls is rotatably mounted in an individual pivoted bracket which extends rearwardly and its rear end is pivotally supported in a substantially U-shaped clevis or standard, each having a leaf spring member extending forwardly therefrom and wherein a connection is provided between the free front end of the leaf spring member and a medial portion of the corresponding evener roll support bracket.

Now, it is a more specific object of this invention to provide an improved pressure applying means for the evener rolls which also comprises an individual leaf spring member for each of the evener rolls whose rear portion, beneath the corresponding standard, is provided with a protuberance or projection therebeneath which is adapted to engage the upper surface of a common transverse bar. The U-shaped standards are fixed to the upper surface of the leaf spring member by means which also secure the corresponding leaf spring member to the common transverse bar.

Each of the U-shaped standards has a rearwardly projecting tail portion integral therewith and the rear portions of the leaf spring members extend beyond the U-shaped standards and are fixed to the tail portions of the corresponding U-shaped standards. The rear portions of the tail portions of the standards each has an adjustment

screw threadably mounted therein whose lower end bears against the upper surface of the common transverse bar. Thus, by adjustment of the screw, the normal distance between the free front end of the corresponding leaf spring member and the medial portion of the corresponding evener roll support bracket may be varied to thereby vary the amount of pressure exerted by the pressure applying means, on the corresponding evener roll, to thereby vary the amount of downward pressure exerted by the corresponding top evener roll against the bottom feed roll.

It is also an object of this invention to provide an apparatus of the type last described wherein the front portion of the common transverse bar, to which a plurality of said standards are secured, is pivotally supported on an axis substantially parallel to the bottom feed roll and wherein one or more adjustment screws threadably penetrate the rear portion of the common transverse bar and whose lower ends bear against the usual apron or other conventional portion of the frame of the drafting machine. Thus, by adjustment of the last-named screws, the amount of downward pressure exerted by the evener rolls against the common bottom feed roll, by the pressure applying means, may be collectively adjusted.

Some of the objects of the invention having been stated, other objects will appear as the description proceeds, when taken in connection with the accompanying drawings, in which—

Figure 1 is a fragmentary top plan view of a roll section of a typical drawing frame showing the evener apparatus and the improved pressure applying means in association therewith;

Figure 2 is an enlarged fragmentary vertical sectional view taken substantially along the line **2—2** in Figure 1;

Figure 3 is an enlarged longitudinal vertical sectional view taken substantially along the line **3—3** in Figure 1;

Figure 4 is an enlarged fragmentary vertical sectional view taken substantially along the line **4—4** in Figure 1, but omitting the front portions of the evener roll support and the leaf spring member and also omitting the evener roll and the bottom feed roll;

Figure 5 is a fragmentary vertical sectional view taken substantially along the line **5—5** in Figure 4;

Figure 6 is an enlarged fragmentary plan view with parts in section taken substantially along the line **6—6** in Figure 2.

In the drawings, the evener apparatus and the improved pressure applying means are shown in association with a textile drawing frame, although it is to be understood that the evener apparatus and the improved pressure applying means may be used in association with any type of textile machine having rolls for attenuating or drafting fibrous strands, such as a spinning frame, roving frame or the like.

The numeral **10** indicates a pair of transversely spaced bearing stands, it being evidence that only a single drafting section or roll section is fully illustrated in the drawing and a substantially greater number of bearing stands and associated parts would normally be used in association with the drawing frame. The bearing stands **10** are fixed on a common frame member **11** and each of the bearing stands **10** has a plurality of substantially U-shaped bearing blocks **12** adjustably secured thereto, there being four of the bearing blocks **12** shown on each of the bearing stands **10**.

Fluted bottom rolls **13**, **14**, **15** and **16** are journaled in the bearing blocks **12** and are suitably driven by conventional means, not shown, at progressively increasing speeds whereby strands, generally designated at S, are successively, additionally attenuated between the rolls **13**, **14**, **15** and **16** in the usual manner.

The rear bottom roll **13** is normally termed a bottom feed roll, the rolls **14** and **15** being intermediate draw-

ing or drafting rolls and the front bottom roll **16** being a delivery drawing roll. The intermediate and delivery drawing rolls **14**, **15** and **16** have respective intermediate and delivery top rolls **20**, **21** and **22** resting thereupon and being journaled at opposite ends thereof in suitable corresponding bearings **23** mounted for vertical movement in the bearing blocks **12**. The top rolls **20**, **21** and **22** may also be fluted for as much of their length as the fluted portions of the respective bottom rolls **13**, **14**, **15** and **16** as shown in Figures 1 and 3, or they may be covered with a resilient material, such as rubber, leather and the like, as is well known to those familiar with the art.

Of course, the top rolls are driven generally through their relationship to the bottom rolls and through the intervening strands S and the intermediate and front or delivery top rolls **20**, **21** and **22** are resiliently urged downwardly against the respective bottom rolls **14**, **15** and **16** by corresponding weight hooks **24** which bear against the bearings **23** and extend downwardly beneath the bottom rolls and are connected to suitable weight means which, in this instance, are shown in the form of leaf spring members **25** suitably secured to the lower surfaces of the horizontal portions **10***a* of the bearing stands **10**. The leaf spring members **25** may be substantially of the type disclosed in my co-pending application entitled Spring Pressure Means for Drafting Mechanisms, Serial Number 310,979, and filed September 23, 1952.

A conventional cover **30** surmounts the drafting or drawing rolls and is pivoted at its rear end on standards **32** carried by the bearing stand **10**. Of course, the front edge of the cover **30** rests upon the front or foremost bearing block **12** in the usual manner. A substantial portion of the cover is omitted from Figure 1 for purposes of clarity.

The strands S are directed to the drawing rolls from a suitable source, not shown, and converge forwardly from the feed roll **13** and are gathered into a suitable trumpet **34** positioned above a pair of calender rolls **33** and **33***a*, for directing the condensed strands S into a suitable container, such as a can carried by a coiler, not shown. Each of the bearing stands **10** has a rearwardly projecting arm **36** integral therewith, to the upper surface of which a conventional horizontal plate or apron **35** is suitably secured.

Now, the parts heretofore described are conventional parts of a drawing frame and the evener mechanism, which is substantially as disclosed in said co-pending application, Serial Number 320,498 is provided in association with the drafting or drawing frame.

As set forth in said last-named co-pending application, instead of a common top feed roll being provided above the bottom feed roll **13** for all of the strands S, a plurality of substantially axially aligned and relatively narrow evener top rolls or evener feed rolls **37** are arranged above, and in engagement with, the common bottom feed roll **13**, there being one of said evener rolls **37** for each of the strands S. The rolls **37** are fluted about their peripheries, the spacing of the flutes on individual evener rolls **37** corresponding to the spacing of the flutes on the common bottom feed roll **13**.

Each of the evener rolls **37** is rotatably supported, as at **40**, in the bifurcated free front end of a corresponding evener roll support bracket broadly designated at **41**. Each evener roll support bracket **41** is provided with a substantially U-shaped or trough shaped medial portion **42** the vertical legs of which have forwardly extending ears **43** integral therewith between which the corresponding evener top roll or feed roll **37** is rotatably supported.

Rearwardly of the trough portion **42** is an inverted U-shaped portion forming downturned ears **44** which are pivotally mounted on a pivot shaft **45**. Opposite ends of the pivot shaft **45** are fixed in a substantially U-shaped

clevis or standard **46** carried by a common transverse spring support bar or clevis support bar **47**.

Although the clevis **46** is similar to the clevis shown in said co-pending application, Serial No. 320,498, its specific form and the common transverse bar **47** are peculiar to the present invention as will be more fully described later in this context. It will be noted that the forwardly projecting ears **43** of each bracket **41** are spaced upwardly from the bottom of the trough portion **42** and the front end of the trough portion **42** has a downwardly and then upwardly curving hook portion **50** on the front end thereof to which the upper end of a link **51** is pivotally connected. The lower end of the link **51** is pivotally connected to an improved form of leaf spring member broadly designated at **52** and which constitutes a part of the present invention.

As heretofore stated, the clevises or standards **46**, the common transverse bar **47** and the leaf spring members **52** are parts of the present invention which will now be described in detail. Referring to Figures 2 and 6, it will be observed that each leaf spring member **52** comprises an elongated thin and relatively flat medial portion **54** provided with a relatively narrow projection **55** on the front end thereof about which a hook portion **56** on the lower end of link **51** is fitted. The rear portion of said medial portion **54** of the leaf spring member **52** extends beneath a substantially flat bottom wall **56** of the corresponding clevis **46** and has a tail portion **57** on the rear end thereof which is provided with upwardly and then inwardly turned tab portions **60** on opposite sides thereof which slidably fit about opposite side edges of a rearwardly extending tail portion **61** integral with the bottom wall **56** of the corresponding clevis **46**.

The rearwardly extending portion **61** of each clevis **46** is preferably somewhat narrower than the bottom wall **56** and is preferably rounded at its rear end as best shown in Figure 6. It will be noted that the tail portion **57** of the leaf spring member **52** terminates short of the rear end of the tail portion **61** of the clevis **46** and said tail portion **61** is threadably penetrated by an adjustment screw **62** whose lower end bears against the upper surface of the common transverse clevis supporting or spring supporting bar **47**, adjacent the rear edge thereof.

Now, in order that each of the clevises or standards **46** and the corresponding leaf spring member **52** may pivot against the upper surface of the common transverse bar **47** with adjustment of the adjustment screw **62**, the medial portion **54** of the leaf spring member **52** is bent downwardly and then upwardly transversely thereof to form a substantially V-shaped projection **64** which extends from adjacent one edge of the medial portion **54** to the other edge thereof, thus forming a groove in the upper surface of said medial portion **54** and a coinciding lateral projection on the lower surface thereof.

The V-shaped portion **64** extends laterally beneath the bottom wall **56** of the corresponding standard **46** and said bottom wall **56** also has a transverse V-shaped portion **65** formed therein at a point substantially beneath the pivot shaft **45** and which forms a projection on the lower surface of the bottom wall **56** of the clevis or standard **46** which fits in the groove defined by the substantially V-shaped portion **64** of the corresponding leaf spring member **52**. The V-shaped portion **65** in the bottom wall **56** of the clevis or standard **46** also forms a lateral groove in the upper surface of the bottom wall **56** in which the lower edge of an elongated pivot nut **66** is positioned, this pivot nut **66** being substantially triangular in cross-section with one of its sharp edges being positioned in the groove formed by the substantially V-shaped portion **65** of the bottom wall **56** of the clevis or standard **46**.

The transverse protuberance formed by the V-shaped or U-shaped portion **65** in the bottom wall **56** of each clevis or standard **46** fits in the depression formed by the portion **64** of the corresponding leaf spring member **52** to

thereby maintain these two parts in fixed relation to each other.

The common transverse bar 47 has a row of bores or openings 66 therethrough, there being one of these bores 66 beneath each of the clevises or standards 46, and each clevis and its corresponding spring 52 are provided with coinciding bores or openings 67 disposed substantially centrally of the transverse V-shaped portions 64 and 65. A screw 70 extends upwardly through each of the bores 66 and through the corresponding bores or openings 67 in the corresponding standards 46 and leaf spring member 52 and the upper end of each screw 70 threadably penetrates the corresponding transverse pivot nut 66 (Figures 4 and 5).

Thus, the screws 70 hold the clevises 46 against the upper surfaces of the corresponding springs 52 and also hold the projections formed by the V-shaped portions 64 of the leaf spring members 52 against the upper surface of the common transverse bar 47 and, upon adjustment of the corresponding adjustment screw 62, the amount of pressure exerted by the spring members 52 on the top evener rolls 37 may be individually adjusted.

Now, the front portion of the transverse bar 47 is pivotally supported in substantially L-shaped brackets 72 in any desired manner and, in this instance, the front edge of the transverse bar 47 has a rod or shaft 73 suitably secured thereto, as by welding, and which extends outwardly beyond opposite ends of the transverse bar 47 and slidably penetrates horizontal adjustment slots 74 provided in the vertical flanges of the substantially L-shaped brackets 72. Threaded opposite ends of the pivot shaft or rod 73 each has a pair of lock nuts 75 and 76 thereon which engage opposite sides of the vertical flanges of the corresponding brackets 72 to thereby lock the shaft or rod 73 in the desired adjusted position.

The brackets 72 are suitably secured to the upper surface of the apron or plate 35, by any suitable means such as screws 80. The rear end portion of the common transverse bar 47 is threadably penetrated by one or more adjustment screws 81, there being two of the adjustment screws shown in Figure 1 disposed adjacent opposite end edges of the common transverse bar 47. The lower ends of the adjustment screws 81 extend downwardly beyond the lower surface of the transverse bar 47 and bear against the upper surface of the apron or plate 35 (Figures 2, 3, and 4).

It is thus seen that the amount of downward pressure exerted by the top evener rolls 37 against the strands of sliver or roving S and the common feed roll 13 may be individually adjusted by adjustment of the corresponding adjustment screws 62 and, on the other hand, the amount of downward pressure effected in the top evener feed rolls 37 may be varied collectively by adjustment of the adjustment screws 81 which will, of course, vary the angularity of the common transverse bar 47 about the axis of its pivot shaft 73.

In other words, when the rear portion of the common transverse bar 47 is adjusted upwardly relative to the apron 35, it is evident that the medial portions 54 of the leaf spring members 52 will all be biased downwardly in unison to thereby effect additional downward pressure in the top evener rolls 37.

On the other hand, upon adjusting the adjustment screws 81 so that the rear portion of the common transverse bar 47 is permitted to move downwardly toward the apron or plate 35, it is evident that this will relax the amount of downward pressure exerted by the leaf spring members 52 on the pivoted brackets 41 and the corresponding top evener rolls 37.

The slots 74 in the brackets 72 are merely provided to facilitate forward and rearward adjustment of the position of the top evener rolls 37 relative to the common bottom feed roll 13 when the top evener rolls 37 are originally installed and to thereby insure that the top evener rolls 37 are centrally positioned above the common bottom feed roll 13.

In the drawings and specification, there has been set forth a preferred embodiment of the invention and, although specific terms are employed, they are used in a generic and descriptive sense only, and not for purposes of limitation, the scope of the invention being defined in the claims.

I claim:

1. In a drafting mechanism having a plurality of sets of top and bottom drafting rolls driven at progressively increasing speeds, a driven bottom feed roll, a plurality of relatively narrow evener rolls bearing against the upper surface of the bottom feed roll whereby individual strands may pass between each evener roll and the bottom feed roll in its course to the sets of top and bottom drafting rolls, and pivoted supports for each of said evener rolls extending rearwardly therefrom; the combination of a plurality of leaf spring members fixed to said drafting mechanism and projecting forwardly to a point adjacent the bottom feed roll, a link conecting each of the leaf spring members with said pivoted supports for the corresponding top evener rolls, and means for individually and collectively adjusting the angularity of said leaf spring members at their ends remote from said links whereby the amount of pressure effected in the top evener rolls by the leaf spring members may be correspondingly adjusted.

2. In a drafting mechanism having a plurality of sets of top and bottom drafting rolls driven at progressively increasing speeds, a driven bottom feed roll, a plurality of relatively narrow evener rolls bearing against the upper surface of the bottom feed roll, a bracket in which each of said evener rolls is rotatably mounted and each bracket extending rearwardly and downwardly from said evener rolls whereby individual strands may pass between each evener roll and the bottom feed roll in its course to the sets of top and bottom drafting rolls; the combination of means to resiliently urge the top evener rolls toward the common bottom feed roll comprising a common transverse bar spaced rearwardly of the common bottom feed roll, means pivotally supporting the front portion of the transverse bar for adjustment about an axis parallel to the bottom feed roll, means for adjusting the rear portion of the common transverse bar for varying its angle, a plurality of leaf spring members fixed to said transverse bar and projecting forwardly therefrom to a point adjacent the bottom feed roll, means carried by each spring member for pivotally supporting the rear portion of the corresponding bracket, and a link connecting each of the leaf spring members with one of said brackets whereby, upon adjustment of the common transverse bar, the amount of pressure effected in the top evener rolls by the leaf spring members may be correspondingly adjusted.

3. In a structure according to claim 2, means for varying the angle of each of said leaf spring members relative to said transverse bar to thereby vary the amount each leaf spring member is biased and to correspondingly vary the downward pressure of each evener roll.

4. In a drafting mechanism having a plurality of sets of top and bottom drafting rolls driven at progressively increasing speeds, a driven bottom feed roll, a plurality of relatively narrow top evener rolls bearing against the upper surface of the bottom feed roll, and movable means supporting each of said evener rolls whereby an individual strand may be passed between each evener roll and the bottom feed roll in its course to the sets of top and bottom drafting rolls; the combination of means to resiliently urge the top evener rolls toward the common bottom feed roll comprising a common transverse bar spaced rearwardly of the common bottom feed roll, means pivotally supporting the front portion of the transverse bar for adjustment about an axis substantially parallel to the bottom feed roll, means for adjusting the rear

portion of the common transverse bar for varying its angle, a plurality of leaf spring members fixed to said transverse bar and projecting forwardly therefrom to a point adjacent the bottom feed roll, and a link connecting each of the leaf spring members with the means supporting the corresponding top evener rolls whereby, upon adjustment of the common transverse bar, the amount of pressure effected in the top evener rolls by the leaf spring members may be correspondingly adjusted.

5. In an evener mechanism for drafting machines wherein a plurality of substantially axially alined top evener rolls are positioned in contacting engagement with the upper surface of a common bottom feed roll and wherein a bracket is provided for rotatably supporting each of said evener rolls, said machine having an apron disposed rearwardly of, and at a lower elevation than, the bottom feed roll and a substantially U-shaped standard pivotally supporting the rear end of each of said brackets; the combination of improved means for effecting downward pressure to the top evener rolls against the common bottom feed roll comprising a common transverse bar pivotally supported at opposite side edges thereof on the apron, means for adjusting the common transverse bar about its pivot point to vary the angularity thereof, a leaf spring member partially disposed between each of said standards and the common transverse bar, the bottom portion of each of the standards and the corresponding portions of each of the leaf spring members having coinciding grooves in the upper surfaces thereof and coinciding projections on the lower surfaces thereof whereby the projection on the lower surface of each standard bears in the groove in the upper surface of the corresponding spring member and the projection on the lower surface of the spring bears against the upper surface of the transverse bar, a tail portion integral with each standard, a screw threadably penerating each of said tail portions and having its lower end bearing against the upper surface of the transverse bar, and means extending through the lower portion of each of the standards and the corresponding leaf spring member at the point at which said projections are provided whereby adjustment of the screws will facilitate individual adjustment of the leaf spring members as to angularity, and means connecting the front ends of the leaf spring members to the medial portions of the brackets in which the corresponding top evener rolls are mounted whereby adjustment of the individual leaf spring members by said screws will vary the amount of downward pressure exerted by each individual top evener roll and whereby adjustment of the common transverse bar will vary the downward pressure exerted by all of the evener rolls, collectively, toward the bottom feed roll.

6. In a drafting machine having top and bottom driven drafting rolls, a bottom feed roll in advance of the drafting rolls, a plurality of evener rolls positioned above the bottom feed roll and in substantially axial alinement with each other, a separate bracket rotatably supporting each of said evener rolls and extending rearwardly and downwardly therefrom, and said machine having a substantially horizontal plate disposed rearwardly of, and at a lower level than, the bottom feed roll, the combination of a substantially horizontally disposed common transverse bar pivotally mounted above said first-named plate, means for adjusting the angle of the transverse bar about an axis substantially parallel to the axis of said bottom feed roll, a leaf spring member for each of said brackets having its free front end spaced below the medial portion of the corresponding bracket, a link connecting the free end of the leaf spring member to the medial portion of said corresponding bracket, said leaf spring member having a lateral projection on the lower surface thereof engaging the upper surface of said transverse bar, a substantially U-shaped standard for pivotally supporting each of said brackets and bearing against the upper surface of the corresponding leaf spring member opposite the lateral projection thereon, a rearwardly extending tail portion on the bottom wall of each standard, an adjustment screw threadably penetrating each of said tail portions and bearing against the upper surface of said transverse bar, and means securing the rear portion of each leaf spring member to the corresponding standard whereby adjustment of said transverse bar will vary the amount of downward pressure exerted on all of the evener rolls collectively and whereby said adjustment screws will vary the angle of the tail portions of said standards about the point at which said lateral projection engages the upper surface of the transverse bar to thereby individually vary the amount of pressure exerted on each top evener roll by each leaf spring member.

7. In a structure according to claim 6, the upper surface of said leaf spring member being provided with a lateral groove corresponding to the lateral projection thereon, the upper and lower surfaces of the bottom wall of the standard being provided with a lateral groove and a lateral projection, respectively, corresponding to the lateral groove and lateral projection in said leaf spring member, a transverse elongated pivot nut having a sharp lower edge fitting in said transverse groove in the upper surface of the bottom wall of each standard, a screw loosely penetrating the bottom wall of the standard and the leaf spring member at said lateral projections, said screw also penetrating the transverse bar and being threadably embedded at its upper end in said elongated pivot nut for securing each of the standards and its corresponding leaf spring member to the upper surface of the common transverse bar.

8. In a drafting machine, having top and bottom driven drafting rolls, a bottom feed roll in advance of the drafting rolls, a plurality of evener rolls positioned above the bottom feed roll and in substantially axial alinement with each other, a separate bracket rotatably supporting each of said evener rolls and extending rearwardly and downwardly therefrom and said machine having a substantially horizontal plate disposed rearwardly of, and at a lower level than, the bottom feed roll; the combination of a substantially horizontally disposed common transverse bar pivotally mounted above said plate, means for adjusting the angle of the transverse bar about an axis substantially parallel to the axis of said bottom feed roll, a leaf spring member for each of said brackets having its free front end spaced below the medial portion of the corresponding bracket, a link connecting the free end of the left spring member to the medial portion of said corresponding bracket, each leaf spring member having a lateral projection on the lower surface thereof engaging the upper surface of said transverse bar, a standard for pivotally supporting each of said brackets and bearing against the upper surface of the corresponding leaf spring member opposite the lateral projection thereon, means for adjusting each of said leaf spring members, with its standard, about the point at which said lateral projection engages the transverse bar, and means securing the rear portion of each leaf spring member to the corresponding standard and to said transverse bar whereby adjustment of said transverse bar will vary the amount of downward pressure exerted on all of the evener rolls collectively and whereby said spring members may be individually adjusted about the point at which said lateral projections engage the upper surface of the transverse bar to thereby individually vary the amount of pressure exerted on each top evener roll by the corresponding leaf spring member.

9. In a drafting mechanism having a plurality of sets of top and bottom drafting rolls driven at progressively increasing speeds, a driven bottom feed roll, a plurality of relatively narrow evener rolls bearing against the upper surface of the bottom feed roll whereby individual strands may pass between each evener roll and the bottom feed roll in their course to the sets of top and bottom drafting rolls, and pivoted supports for each of said evener

rolls extending rearwardly therefrom; the combination of a plurality of leaf spring members fixed to said drafting mechanism and projecting forwardly to a point adjacent the bottom feed roll, a link connecting each of the leaf spring members with said pivoted supports for the corresponding top evener rolls, means for adjusting the angularity of said leaf spring members at their ends remote from said links whereby the amount of pressure effected in the top evener rolls by the leaf spring members may be correspondingly adjusted, and means for collectively adjusting the evener rolls, the pivoted supports, the leaf spring members and the links transversely of the longitudinal axis of the bottom feed roll.

10. In a drafting mechanism having a plurality of sets of top and bottom drafting rolls driven at progressively increasing speeds, a driven bottom feed roll, a plurality of relatively narrow evener rolls bearing against the upper surface of the bottom feed roll, a bracket in which each of said evener rolls is rotatably mounted and each bracket extending rearwardly and downwardly from said evener rolls whereby individual strands may pass between each evener roll and the bottom feed roll in its course to the sets of top and bottom drafting rolls; the combination of means to resiliently urge the top evener rolls toward the common bottom feed roll comprising a common transverse bar spaced rearwardly of the common bottom feed roll, means pivotally supporting the front portion of the transverse bar for adjustment about an axis parallel to the feed roll, means for adjusting the rear portion of the common transverse bar for varying its angle, means for adjusting the means pivotally supporting the front portion of the transverse bar forwardly and rearwardly relative to the common bottom feed roll, a plurality of leaf spring members fixed to said transverse bar and projecting forwardly therefrom to a point adjacent the bottom feed roll, means carried by each spring member for pivotally supporting the rear portion of the corresponding bracket, and a link connecting each of the leaf spring members with one of said brackets whereby, upon adjustment of the common transverse bar, the amount of pressure effected in the top evener rolls by the leaf spring members may be correspondingly adjusted.

11. In a drafting machine having top and bottom driven drafting rolls, a bottom feed roll in advance of the drafting rolls, a plurality of evener rolls positioned above the bottom feed roll and in substantially axial alinement with each other, a separate bracket rotatably supporting each of said evener rolls and extending rearwardly and downwardly therefrom and said machine having a substantially horizontal plate disposed rearwardly of, and on a lower level than, the bottom feed roll; the combination of a

pair of spaced supports secured to said horizontal plate and being spaced parallel to the bottom feed roll, said supports being provided with corresponding forwardly and rearwardly extending adjustment slots therein, a pivot shaft extending between and having opposite ends thereof slidably penetrating said adjustment slots in the supports, nuts threadably secured on opposite ends of the pivot shaft and engaging the distal surfaces of said supports, a transverse bar fixed at its front edge to said pivot shaft and extending rearwardly therefrom, whereby said supports and the nuts on the pivot shaft facilitate adjustment of the angle of the transverse bar about an axis substantially parallel to the axis of said bottom feed roll and also facilitate forward and rearward adjustment of the transverse bar, a leaf spring member for each of said brackets having its free front end spaced below the medial portion of the corresponding bracket, a link connecting the free end of each leaf spring member to the medial portion of said corresponding bracket, said leaf spring member having a lateral projection on the lower surface thereof engaging the upper surface of said transverse bar, a substantially U-shaped standard for pivotally supporting each of said brackets and bearing against the upper surface of the corresponding leaf spring member opposite the lateral projection thereon, a rearwardly extending tail portion on the bottom of each standard, an adjustment screw threadably pentrating each of said tail portions and bearing against the upper surface of said transverse bar rearwardly of said pivot shaft, and means securing the rear portion of each leaf spring member to the corresponding standard whereby adjustment of said pivot shaft about its axis will vary the amount of downward pressure exerted on all of the evener rolls collectively, whereby said adjustment screws will vary the angle of the tail portions of said standards about the point at which said lateral portions engage the upper surface of the transverse bar to thereby individually vary the amount of pressure exerted on each top evener roll by each leaf spring member and whereby forward and rearward adjustment of said pivot shaft in said supports facilitates proper positioning of the evener rolls and intervening parts relative to the bottom feed roll.

References Cited in the file of this patent

UNITED STATES PATENTS

268,365	Furbush	Nov. 28, 1882
763,863	Drury	June 28, 1904
802,492	Birch	Oct. 24, 1905
1,994,052	Stone	Mar. 12, 1935
2,260,130	Armstrong et al.	Oct. 21, 1941
2,271,191	Gossett	Jan. 27, 1942