June 17, 1947. J. D. ROBERTSON 2,422,369

CLOTH GUIDER

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Fig. 1.

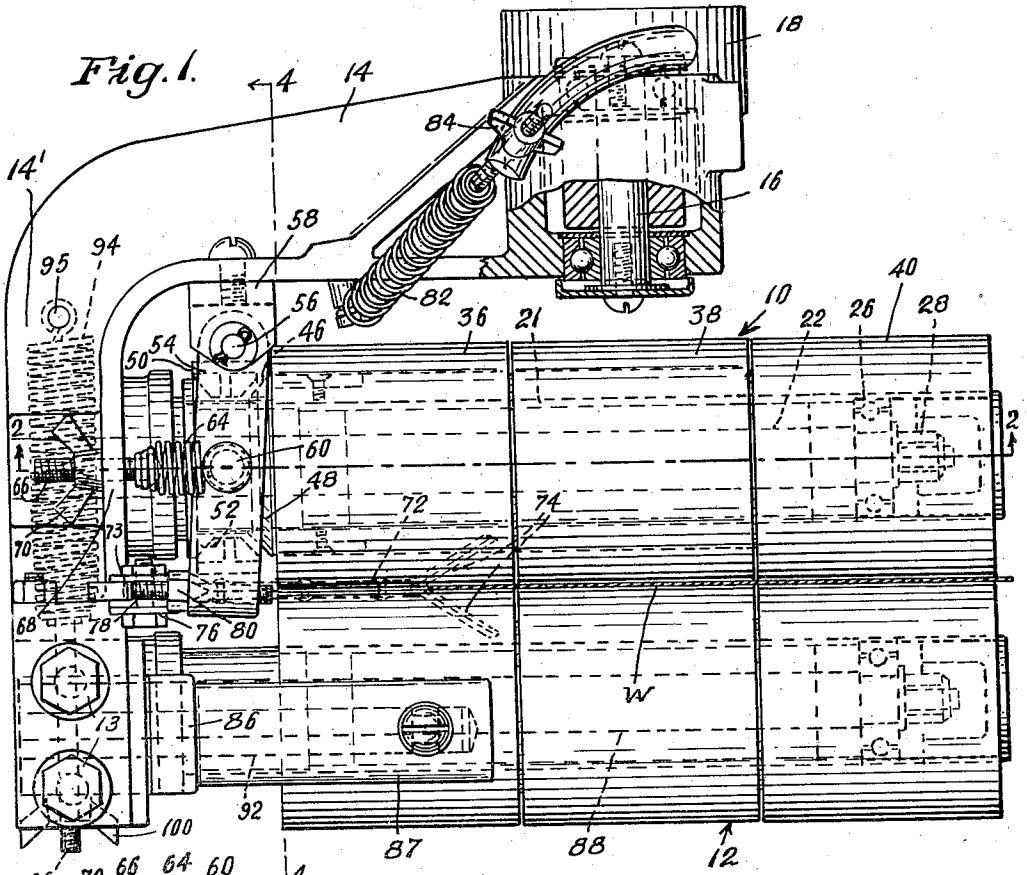


Fig. 2.

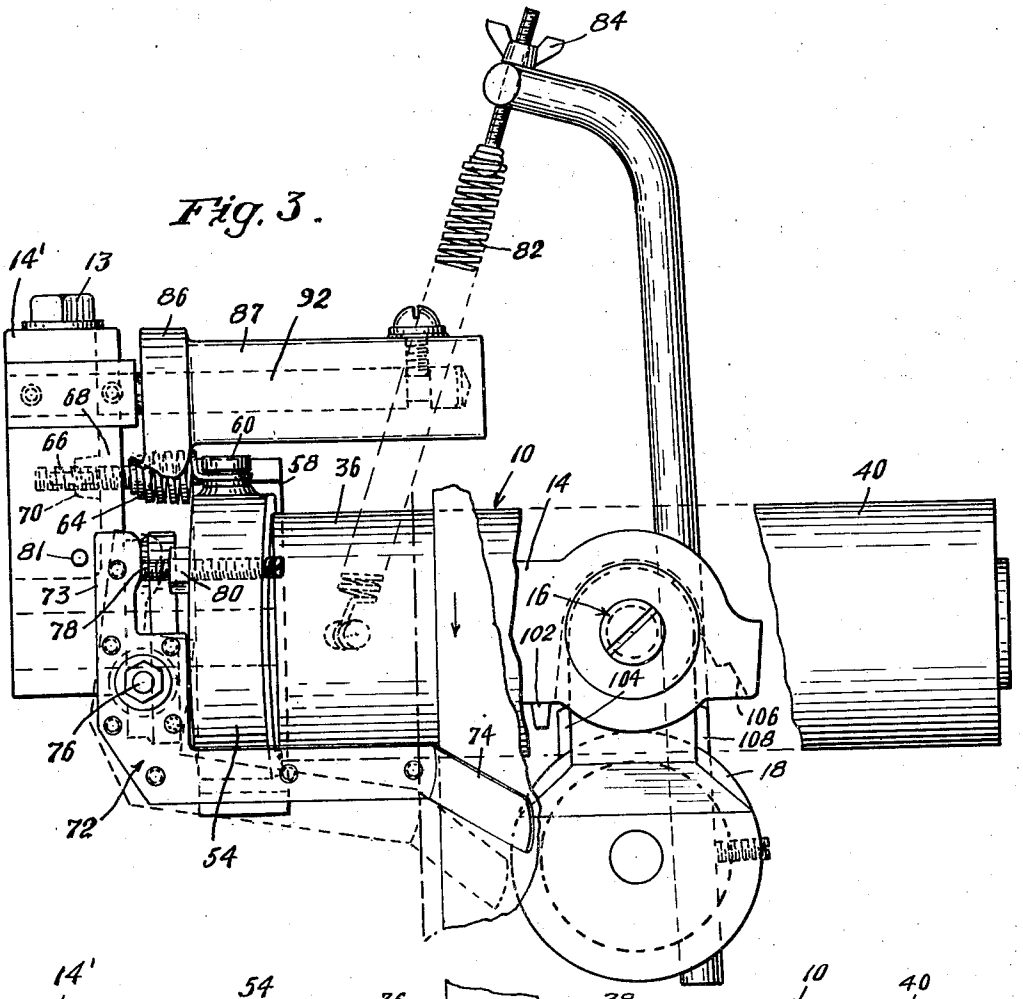
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Fig. 3.



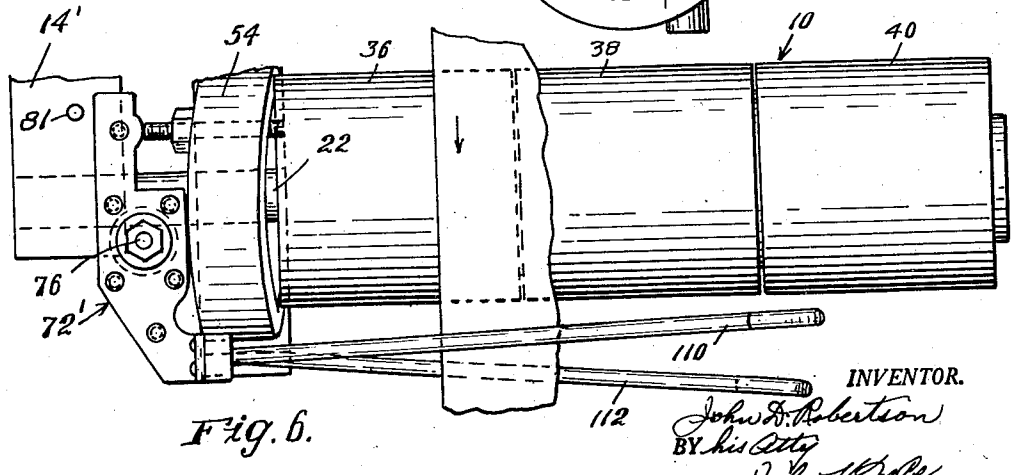


Fig. 6.

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CLOTH GUIDER

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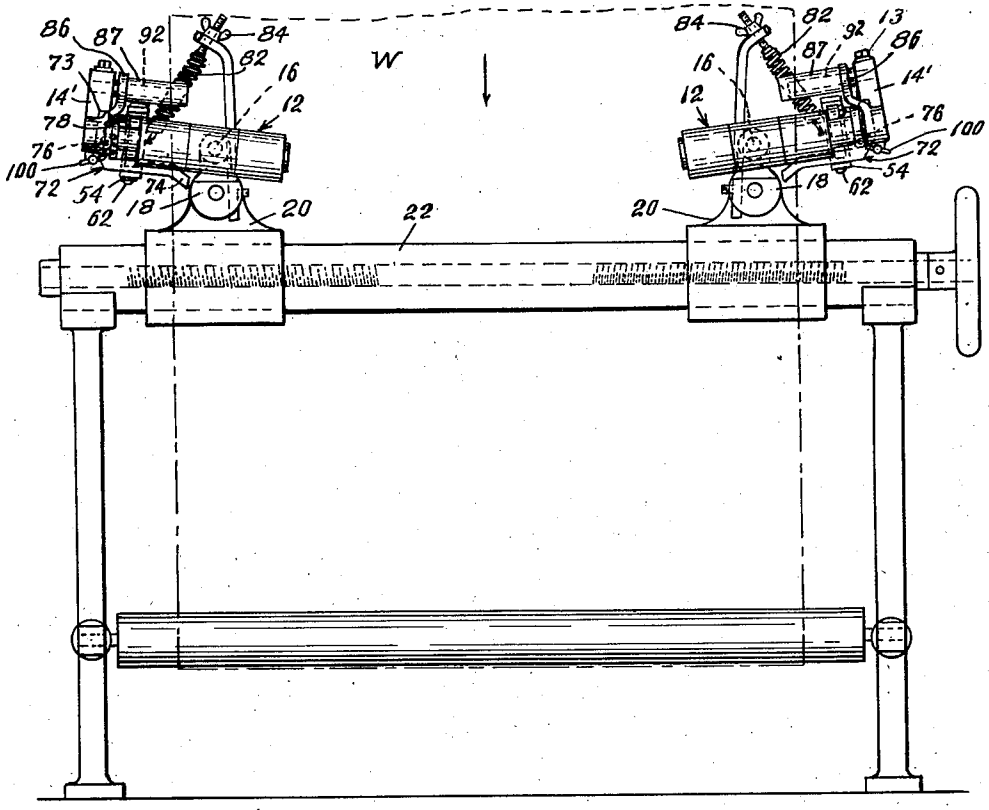


Fig. 5.

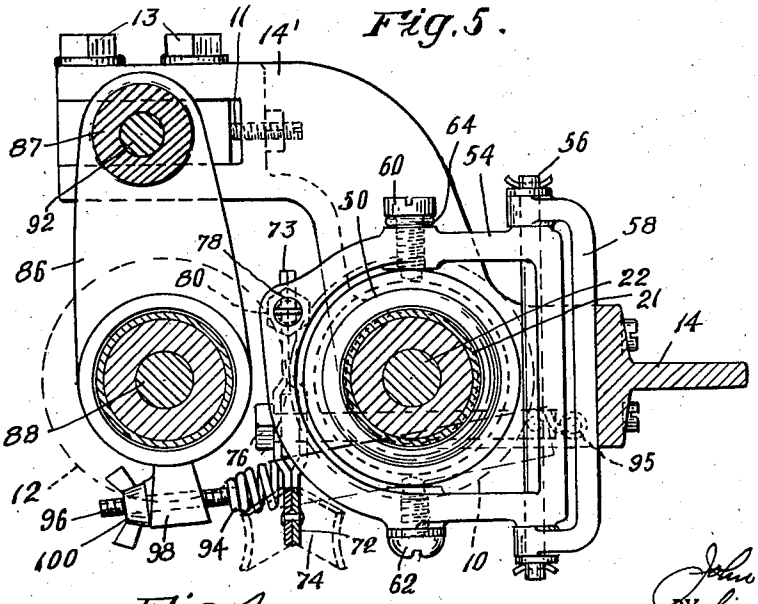


Fig. 4.

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UNITED STATES PATENT OFFICE

2,422,369

CLOTH GUIDER

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Application September 30, 1944, Serial No. 556,573

18 Claims. (Cl. 26—66)

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This invention relates to improvements in cloth guiders and more particularly to that class of cloth guiders which are self-acting to correct selvage deviations, as distinguished from the relatively more complicated and more expensive cloth guiders which require the intervention of an exterior power medium, such as electricity, compressed air, and the like, for controlling the selvage correcting means.

Cloth guiders of the general type to which the invention relates ordinarily have tiltable pairs of rolls which engage opposite selvage regions of a travelling web of cloth, and each pair of rolls is responsive automatically to change the degree of tilt of the rolls whenever the engaged selvage region of the web departs from a predetermined transverse relationship to the center-line of travel of the web. The respective pairs of rolls are separately tiltable in parallelism with the plane of the web engaged thereby so that a transverse traction or repulsion can be exerted by the rolls on the cloth which traction or repulsion is varied by increase or decrease of the angle of tilt of the rolls relative to a plane at right angles to the plane of the traveling web.

It is an object of my present invention to utilize the tilting roll principle of prior disclosures but to provide means whereby the variations in the tilt of the rolls are more sensitively responsive to selvage deviations, as compared with the prior disclosures. I provide sectional rolls and means sensitively responsive to selvage deviations for braking one or more roll sections when a selvage is out of its predetermined line of travel, thereby to impose a drag on the web on that side of the pivot of the rolls which will cause tilting thereof in direction to effect a lateral shifting of the selvage into its predetermined line of travel.

Another object is to provide a pivotally mounted pair of web-engaging rolls which constantly are acted upon by two oppositely directed forces which tend to tilt the pair of rolls as a unit in opposite directions about their pivot, at least one of said forces being adjustable for setting the roll unit, when free of a web, in a state of balance with the roll axes in a predetermined selective plane.

Another object of my invention is to provide an efficient cloth guide which can be lighter in weight and simpler in construction than the prior cloth guiders.

A further object is to provide an improved guider roll structure suitable for coacting with my improved selvage-actuated braking features.

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An additional object is to provide means for readily and effectively adjusting the braking means to compensate for wear.

It is, moreover, my purpose and object generally to improve the structure and operation of self-acting cloth guides.

In the accompanying drawings:

Figure 1 is a top plan view of a tiltable cloth guide mechanism embodying features of my invention, between whose rolls one selvage region of a web of cloth is shown in cross-section, it being understood that a similar mechanism will engage the opposite selvage region of the web;

Figure 2 is a cross-sectional view on line 2—2 of Figure 1;

Figure 3 is a side elevation of the mechanism of Figure 1 with the near roll removed and its bracket broken away, the central portion of the rear roll also being broken away;

Figure 4 is a cross-sectional view on line 4—4 of Figure 1;

Figure 5 is a front elevation showing my improved cloth guiding units engaging opposite selvage regions of a web of cloth; and

Figure 6 is a fragmentary front elevation of a modified form having selvage engaging fingers on the brake-actuating lever.

Referring to the drawings, the cloth guiding mechanisms, one at each selvage region of the web W of cloth as seen in Fig. 5, are designed to serve respectively at the right and left sides of the machine but otherwise will be substantially the same in structure and operation, and a detailed description of one mechanism will be equally applicable to the other.

Referring to Fig. 1, each mechanism comprises a pair of rolls indicated generally at 10 and 12 carried on a swinging arm 14 whose pivotal axis 16 is on a base 18 which is adapted for securement to a member 20 (Fig. 5) which is adjustable on the bar 22 extending from side to side of the web W. The rolls 10, 12 are illustrated in an arrangement for co-action with a web W which travels downward in a vertical plane although obviously the web might travel upward or may approach the guide rolls in a horizontal plane or in any inclined plane between vertical and horizontal, in each of which cases the guiding mechanism and coacting elements would be correspondingly shifted for effective co-action with the web.

In the embodiment herein represented, the axis 16 of the roll-carrying arm 14 is at right angles to the plane of travel of the web to the rolls, and is located in rear of the rolls at a mid-loca-

tion along their extent and in the horizontal plane of the axis of the rolls. Arm 14 extends from its axis in general direction parallel with the plane of the web W at the rear side of the latter and, at a location beyond the outer ends of the rolls, the arm 14 turns sharply forward and has the forwardly extending part 14' on which the rolls are mounted, the roll 10 having a fixed axial support on arm extension 14' and the roll 12 being mounted in a bracket toward the forward end of the extension 14' for movement toward and from roll 10 about an axis 92 which is parallel with the axis of roll 12 and adjustable on its block mount into or out of parallelism with roll 10 by means of set screw 11 and clamping screws 13.

Referring to Fig. 2, the roll 10 is shown mounted on a sleeve 21 which in turn is rotatably mounted on a spindle 22 whose outer end is secured in arm extension 14' as by the set screw 24. A ball-bearing 26 rotatably supports the inner end of sleeve 21 on the inner end of spindle 22, it being secured by nut 28 on a reduced portion of the spindle, and a bearing 30 rotatably supports the outer end of the sleeve 21 on the spindle, this bearing preferably being an oil-less bearing. Felt or the like packing washers 32 may be held in engagement with the bearings 26, 30 by a coil spring 34.

Roll 10, as shown, is made in three sections 36, 38 and 40. Section 40 may consist of a relatively thick cylinder of rubber cemented or otherwise secured to the inner end of sleeve 21, to rotate therewith. Section 38 may consist of an oil-less bushing 42 freely rotatable on sleeve 21, and a rubber cylinder 38 cemented or otherwise secured to bushing 42. The section 36 of roll 10 similarly has its cylinder 36 of rubber cemented or otherwise secured to an oil-less bushing 44 which is freely rotatable on sleeve 21. This bushing 44, however, has secured thereto a brake ring 46 having a friction surface 48 for co-action with a brake member 50 which is movable from engagement with a brake ring 52 fixed on the outer end of sleeve 21 to and through a neutral position and into engagement with the brake ring 46 of roll section 36.

Brake member 50 is carried within a yoke 54 which is pivoted at 56 (Figs. 1 and 4) on bracket 58 projecting forwardly from swinging arm 14. Member 50 is mounted on the ends of oppositely disposed screws 60, 63 in yoke 54 (Fig. 2) so that its braking surfaces continue parallel with the braking surfaces of rings 46, 52 when yoke 54 is rocked about its pivot 56. A coil spring 64 tends always to maintain the brake member 50 in engagement with brake ring 52 so that the inner roll section 40 will be in condition to impose a drag on a web W initially inserted between the rolls, while sections 36, 38 will be free running on sleeve 21. One end of spring 64 is shown engaged with screw 60 and its other end is loosely engaged with the headed end of a screw 66 which extends through ear 68 on arm extension 14', with a wing nut 70 on the threaded end of the screw for adjusting the tension of the spring.

In the operation of my cloth guider, the brake member 50 is shifted to neutral position or into engagement with brake ring 46 by means of a bell crank lever 72 which is responsive to outward travel of a selvage between the rolls 10, 12. Lever 72 as shown consists of two lever plates superimposed and riveted together, the plates at their inner ends diverging, in the embodiment of Figs. 1–5, to provide a V-notch 74 within which

a selvage is adapted to engage to cause swinging of the lever. In Fig. 3 lever 72 is shown pivoted at 76 on a part of arm extension 14', the pivot preferably including a ball bearing providing sensitivity of response of lever 72 to engagements by a selvage.

The lever arm having the V-notch 74 extends generally horizontally at a plane below the pivot 76 of the lever, when the brake member 50 is engaged with brake ring 52, so that engagement of a downwardly travelling selvage in the V-notch 74 can swing the lever clockwise about its pivot. The other and shorter arm 73 of the lever has generally vertical extent and its end portion is in position to engage the outer end of an adjustable threaded pin 78 which may be screwed into yoke 54 more or less and which can be locked in any adjusted position by lock nut 80. A stop pin 81 may be provided for limiting outward movement of lever arm 73.

If a selvage departs outwardly along rolls 10, 12 from a predetermined course, it engages in the V-notch 74 and produces frictional drag on V-notched end of the bell crank lever 72 which causes a clockwise swinging of lever 72, considering the left-hand unit in Fig. 5, or a counter-clockwise swinging of lever 72, considering the right-hand unit in Fig. 5. This results in yoke 54 being swung inward about its pivot 56 thereby to move brake member 50 from engagement with brake ring 52 to a neutral position out of contact with both brake rings 52 and 46. All sections of roll 10 are then freed from the action of the brake. Inasmuch as the drag imposed on the web W by the braked inner section 40 will have caused downward tilting of the inner ends of the rolls, the above described release of this braking action will permit return of the rolls to or near horizontal position due to the fact that, in the disclosed embodiment, the center of gravity of the tiltable unit is located outward of its pivot 16 so that gravity tends to rotate the left-hand unit counter-clockwise and the right-hand unit clockwise, as viewed in Fig. 5. A coil spring 82 resiliently opposes this gravitational tendency and may be adjusted as to tension by wing nut 84 so that the unit is approximately balanced when the rolls are horizontal or nearly so, although it may be desirable for some work to balance the rolls in a predetermined slightly tilted position.

If the selvage continues to move outward after the brake member 50 has been moved to neutral position, the incident frictional drag tilts lever 72 still further until brake member 50 moves into engagement with brake ring 46 thereby to brake roll section 36 and apply a drag to the web W at the selvage region thereof, to the left of pivot 16 of the unit (Figs. 1 and 3). This results in the web tilting the unit in the opposite direction about pivot 16 so that the rolls act on the cloth with inwardly propulsive effect until the selvage moves back to a predetermined normal course.

Roll 12, similar to roll 10, is made in three sections which co-act with sections 36, 38 and 40. This roll, however, is mounted on a bracket 86 in which the spindle 88 has its outer end secured in any suitable manner, and the bracket 86 is mounted with a long bearing 87 on a spindle 92 which is adjustably supported at the outer end of an elevated part of projection 14' of arm 14. A coil spring 94 has one end connected at 95 to arm 14 and has its other end engaged around the headed end of a screw 96 which extends through an ear 98 on bracket 86, with a wing nut

100 on the threaded end of the screw for adjusting the tension of spring 94. Hence the spring 94 constantly resiliently urges roll 12 against roll 10. The roll sections of roll 12 may be similar to those of roll 10 excepting that all of the sections are freely rotatable, although if desired this roll also may be provided with a brake like that operative on roll 10. However, any braking action on a section of roll 10 acts to correspondingly slow down the co-acting section of roll 12 and ordinarily there is no need for separate braking of roll 12.

Adjustment for wear of the braking surfaces may be accomplished easily by screwing brake ring 52 inward on sleeve 21 a needed amount and screwing pin 78 outward to the left in Fig. 3 a corresponding amount.

Referring more particularly to Fig. 3, wherein bracket 86 is broken away and roll 12 removed, the unit is in position with the axis of the roll 10 horizontal, the spring 82 balancing the gravitational tendency of the unit to turn about axis 16. The central portion of roll 10 also is broken away in this view to show the limits of tilting of the unit. Lug 102 on arm 14 engaging part 104 on base 18 limits tilting of the unit in one direction about its pivot 16; and part 106 on arm 14 engaging part 108 on base 18 limits tilting of the unit in the opposite direction. These limits permit considerably more tilting in one direction than in the other because at times the inner ends of the rolls must be tilted substantially downward for exerting substantial lateral traction on the cloth, such as when a selvage is initially inserted between the inner ends of the rolls and must be carried outward between the rolls to attain a full spread of the cloth. This substantial downward tilt of the rolls naturally results when the selvage is initially engaged, due to the drag imposed thereon as a result of braking of the inner section 40 of roll 10. However, as soon as the selvage frictionally engages in the V-notch 74 of bell crank lever 72 and tilts it, the brake member 50 is shifted to release roll section 40 and spring 82 then acts to swing the unit back to or close to horizontal position. Actually the rolls normally would tilt slightly downward when a web of cloth is being guided through the device, and the opposite selvages will normally just engage the bell cranks enough to maintain the brake members 50 in neutral positions, until a departure of a selvage from its predetermined course causes a shifting of a brake member 50 until the selvage has returned to its proper course.

In Fig. 6 there is indicated a finger type of selvage engaging means on the brake actuating lever 72'. The spaced fingers 110, 112 extend in a diverging relation along the rolls 10, 12 in a relation whereby, when a web engages between them, more and more friction is produced as the selvage moves laterally outward, as particularly described in United States Letters Patent No. 2,118,375, granted May 24, 1938, to Julien Dungler.

It should be understood that my invention resides in the provision for causing a drag on the cloth for tilting a roll unit in direction to correct a selvage deviation or to stop lateral movement of a selvage, in response to frictional drag of a selvage on the brake controlling means, and while I have shown one satisfactory manner of mounting the roll units and what I now consider to be a preferred form of braking means and control therefor responsive to lateral shifting of a selvage, the roll units may be otherwise tiltably mounted and various forms of brakes and controls may be utilized without departing from the spirit and scope of my invention so long as a braking means is responsive to frictional drag of a selvage resulting from a lateral outward movement of the selvage between the rolls 10 and 12.

I claim as my invention:

1. In a web guiding machine, a pivoted unit having a pair of coacting rolls for engaging opposite faces of a travelling web at a marginal region of the web, said rolls imposing a drag on the web whereby the web tends to tilt the rolls about the pivot of said unit, a brake movable into and out of braking relation to at least one of said rolls to vary the amount of drag imposed by the rolls on said web thereby to vary the degree of tilt of the rolls, and brake actuating means having a part in position for engagement by the web and responsive to frictional drag of the web thereon for actuating said brake.

2. In a web guiding machine, a pivoted unit having a pair of coacting rolls for engaging opposite faces of a travelling web at a marginal region of the web, said rolls imposing a drag on the web whereby the web tends to tilt the rolls about the pivot of said unit, adjustable means yieldingly opposing tilting of said rolls in one direction by the web, a brake movable into and out of braking relation to at least one of said rolls to vary the amount of drag imposed by the rolls on said web thereby to vary the degree of tilt of the rolls, and brake actuating means having a part in position for engagement by the web and responsive to frictional drag of the web thereon for actuating said brake.

3. In a web guiding machine, a pivoted unit having a pair of coacting rolls for engaging opposite faces of a travelling web at a marginal region of the web, said rolls imposing a drag on the web whereby the web tends to tilt the rolls about the pivot of said unit, a coil spring adjustably tensioned between said unit and a relatively fixed support and resiliently opposing tilting of said rolls in one direction by the web, a brake movable into and out of braking relation to at least one of said rolls to vary the amount of drag imposed by the rolls on said web thereby to vary the degree of tilt of the rolls, and brake actuating means having a part in position for engagement by the web and responsive to frictional drag of the web thereon for actuating said brake.

4. In a web guiding machine, a pivoted unit having a pair of coacting rolls for engaging opposite faces of a travelling web at a marginal region of the web, said rolls imposing a drag on the web whereby the web tends to tilt the rolls about the pivot of said unit, a brake movable into and out of braking relation to at least one of said rolls to vary the amount of drag imposed by the rolls on said web thereby to vary the degree of tilt of the rolls, and a brake actuating lever having one arm extending into position to be engaged by an edge region of the web as the said edge region of the web moves laterally outward between the rolls, whereby the lever is rocked varying amounts by frictional drag of the web thereon.

5. In a web guiding machine, a pivoted unit having a pair of coacting rolls for engaging opposite faces of a travelling web at a marginal region thereof, said rolls each comprising a plurality of independently rotatable sections adapted to impose a drag on the web whereby the web tends to tilt the rolls about the pivot of said unit, a brake movable into and out of braking relation to at least one section of at least one of the rolls to

vary the amount of drag imposed by the rolls on said web thereby to vary the degree of tilt of the rolls, and brake actuating means responsive to frictional drag of an edge region of the web thereon.

6. In a web guiding machine, a pivoted unit having a pair of coacting rolls for engaging opposite faces of a travelling web at a marginal region thereof, said rolls each comprising a plurality of independently rotatable sections adapted to impose a drag on the web whereby the web tends to tilt the rolls about the pivot of said unit, a brake movable into and out of braking relation to at least one section of at least one of the rolls to vary the amount of drag imposed by the rolls on said web thereby to vary the degree of tilt of the rolls, brake actuating means responsive to frictional drag of an edge region of the web thereon, and means yieldingly urging said brake into braking relation to a section of one roll and operative to brake that section in absence of a brake actuating frictional drag of the web on said brake actuating means.

7. In a web guiding machine, a pivoted unit having a pair of coacting rolls for engaging opposite faces of a travelling web at a marginal region thereof, said rolls each comprising a plurality of independently rotatable sections adapted to impose a drag on the web whereby the web tends to tilt the rolls about the pivot of said unit, a brake movable into and out of braking relation to different sections of at least one of the rolls to vary the amount of drag imposed by said rolls on said web thereby to vary the degree of tilt of the rolls, said different brakable sections being on opposite sides of the pivot of said unit whereby the web tends to tilt the rolls in one direction about said pivot when one section of a roll is braked and in the opposite direction when the other section of a roll is braked, and brake actuating means responsive to frictional drag of an edge region of the web thereon for shifting the brake from one to the other of said roll sections.

8. Mechanism for guiding a travelling web, comprising a pair of pivotally mounted guide units operative on a travelling web at opposite marginal regions thereof, each said unit comprising a pair of coacting guide rolls disposed generally transversely of the web, and a pivoted frame rotatably supporting the rolls at their outer ends, the pivot of said frame having axial extent perpendicular to the plane of the web and being located in the common plane of the axes of said rolls and inward toward the center-line of travel of the web relative to the center of gravity of said unit, whereby gravity tends to rotate said unit in direction to tilt the inner ends of the rolls upwardly in parallelism with the web, adjustable resilient means counter-acting said rotational tendency due to gravity and effective to maintain the axes of said rolls in a predetermined plane of approximate balance in absence of substantial drag on the web applied by said rolls, said rolls each having a plurality of rotatable sections of which one is outward and another inward of said pivot of the frame, means associated with at least one of said rolls for selectively braking different sections thereof, and means located for frictional engagement by an edge region of a web and yieldably responsive to frictional drag of the web thereon for shifting said braking means and altering the drag effect of said rolls on the web.

9. Mechanism for guiding a travelling web comprising a pair of pivotally mounted guide

units operative on a travelling web at opposite marginal regions thereof, each said unit comprising a pair of coacting guide rolls disposed generally transversely of the web, and a pivoted frame rotatably supporting the rolls at their outer ends, the pivot of said frame having axial extent perpendicular to the plane of the web and being located in the common plane of the axes of said rolls and inward toward the center-line of travel of the web relative to the center of gravity of said unit whereby gravity tends to rotate said unit in direction to tilt the inner ends of the rolls upwardly in parallelism with the web, means acting on said pivoted frame and adjustable to apply thereto a force counter-acting gravity for approximately balancing the rolls in a predetermined position, means for braking at least one of said rolls, thereby to cause drag on the travelling web and resulting tilting of the rolls, and means in the path of outward travel of an edge of the web and yieldingly responsive to frictional drag of the web thereon for shifting said braking means and altering the drag effect of said rolls on the web.

10. Mechanism for guiding a travelling web comprising a pair of pivotally mounted guide units operative on a travelling web at opposite marginal regions thereof, each said unit comprising a pair of coacting guide rolls disposed generally transversely of the web and a pivoted frame rotatably supporting the rolls at their outer ends, the pivot of said frame having axial extent perpendicular to the plane of the web and being located in the common plane of the axes of said rolls and inward toward the center-line of travel of the web relative to the center of gravity of said unit whereby gravity tends to rotate said unit in direction to tilt the inner ends of the rolls upwardly in parallelism with the web, means acting on said pivoted frame and adjustable to apply thereto a force counter-acting gravity for approximately balancing the rolls in a predetermined position, means for braking at least one of said rolls thereby to cause drag on the travelling web and resulting tilting of the rolls, and means in the path of outward travel of an edge of the web and yieldingly responsive to frictional drag of the web thereon for shifting said braking means and altering the drag effect of said rolls on the web, and adjustable means for compensating for wear at the braking surfaces.

11. A web guiding mechanism comprising oppositely disposed pairs of coacting guide rolls for engaging opposite marginal regions of a travelling web, mounting means for each pair of rolls, each said mounting means being pivotally supported for movement in directions to tilt the axes of its rolls in parallelism with the web, adjustable means yieldably holding each mounting means and its rolls with the axes of the rolls approximately at right angles to the center-line of travel of the web, means for braking at least one roll of each pair of rolls thereby to cause drag on the travelling web and consequent tilting of the rolls, and means located for engagement by an edge region of the web and yieldingly responsive to frictional drag of the web thereon for shifting said braking means and altering the drag effect of the rolls on the web.

12. In a web guiding mechanism having tiltable pairs of rolls engaging opposite side margins of a travelling web, means for controlling the tilting of a said pair of rolls comprising a plural section construction of the rolls of which one sec-

tion of each roll projects to one side of the axis of tilting of the rolls and another section of each roll projects to the opposite side of the said axis, braking means selectively engageable with different sections of one of the rolls, and means responsive to frictional engagement of an edge region of the web thereon for shifting said braking means and altering the drag effect of the rolls on the web.

13. In a web guiding mechanism having tiltable pairs of rolls engaging opposite side margins of a travelling web, means for controlling the tilting of a said pair of rolls comprising a plural section construction of the rolls of which one section of each roll projects to one side of the axis of tilting of the rolls and another section of each roll projects to the opposite side of the said axis, braking means selectively engageable with different sections of one of the rolls and having an intervening neutral position in which it is disengaged from all roll sections, and means located for engagement by an edge region of a web and yieldable to shift said braking means in response to frictional drag of the web thereon, said braking means being resiliently urged into braking engagement with one of said roll sections, and said yieldable means being located relative to a predetermined course of travel of a said edge region of the web so that said yieldable means normally is held by said edge region of the web, on its normal course, in position maintaining said braking means in its said neutral position.

14. A web guiding mechanism having tiltable pairs of rolls engaging opposite side margins of a travelling web, each of said rolls comprising a plurality of rotatable sections and at least one roll of each pair having an inner end section fixed on the inner end of a rotatable sleeve extending throughout the length of the roll and having another section freely rotatable on said sleeve, said sleeve having a brake ring fixed thereon at its outer end and said freely rotatable section of roll having a similar but oppositely disposed brake ring fixed on the outer side thereof, a brake shiftable selectively into engagement with said brake rings and to a neutral position between said brake rings, and means responsive to frictional engagement of an edge region of the web therewith for shifting said brake.

15. A web guiding mechanism having tiltable pairs of rolls engaging opposite side margins of a travelling web, each of said rolls comprising a plurality of rotatable sections, braking means movable for engaging different sections of a said roll, means resiliently urging said braking means into engagement with one section of said roll, and a bell-crank lever having one arm engaging said braking means and its other arm formed at its end with a V-notch constituting an abutment in the path of outward movement of an edge of the web and yieldable to shift said braking means in response to frictional engagement therewith of a said edge of the web.

16. In a web guiding machine, a pivoted unit having a pair of coacting rolls for engaging opposite faces of a travelling web at a marginal region of the web, said rolls imposing a drag on the web whereby the web tends to tilt the rolls about the pivot of said unit, a brake movable into and out of braking relation to at least one of said rolls to vary the amount of drag imposed by the rolls on said web thereby to vary the degree of tilt of the rolls, and brake actuating means having a part in position for engagement by the web and responsive to engagement of the web therewith for actuating said brake.

17. In a web guiding machine, a pivoted unit having a pair of coacting rolls for engaging opposite faces of a travelling web at a marginal region of the web, said rolls imposing a drag on the web whereby the web tends to tilt the rolls about the pivot of said unit, a brake movable into and out of braking relation to at least one of said rolls to vary the amount of drag imposed by the rolls on said web thereby to vary the degree of tilt of the rolls, and brake actuating means having a part in position for engagement by the web and responsive to edgewise pressure of the web thereon for actuating said brake.

18. In a web guiding machine, a pivoted unit having a pair of coacting rolls for engaging opposite faces of a travelling web at a marginal region of the web, said rolls imposing a drag on the web whereby the web tends to tilt the rolls about the pivot of said unit, a brake movable into and out of braking relation to at least one of said rolls to vary the amount of drag imposed by the rolls on said web thereby to vary the degree of tilt of the rolls, and brake actuating means having an abutment in the path of outward lateral movement of an edge of the web and responsive to lateral pressure of an edge of the web thereon for actuating said brake.

JOHN D. ROBERTSON.

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