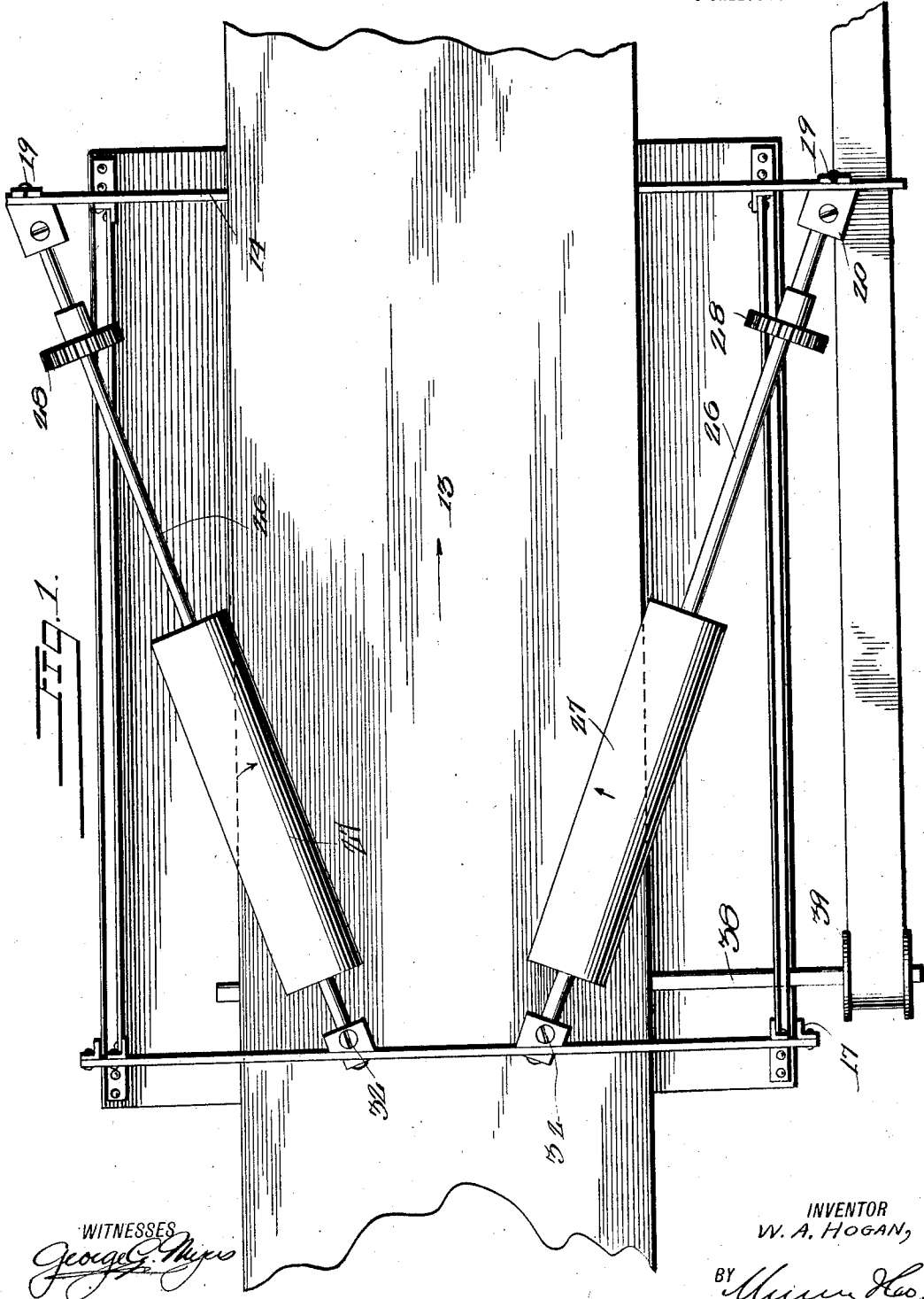


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CLOTH GUIDING DEVICE FOR CLOTH FINISHING MACHINES.
APPLICATION FILED JUNE 24, 1920.

1,385,746.

Patented July 26, 1921.

5 SHEETS—SHEET 1.



WITNESSES
George E. Myers

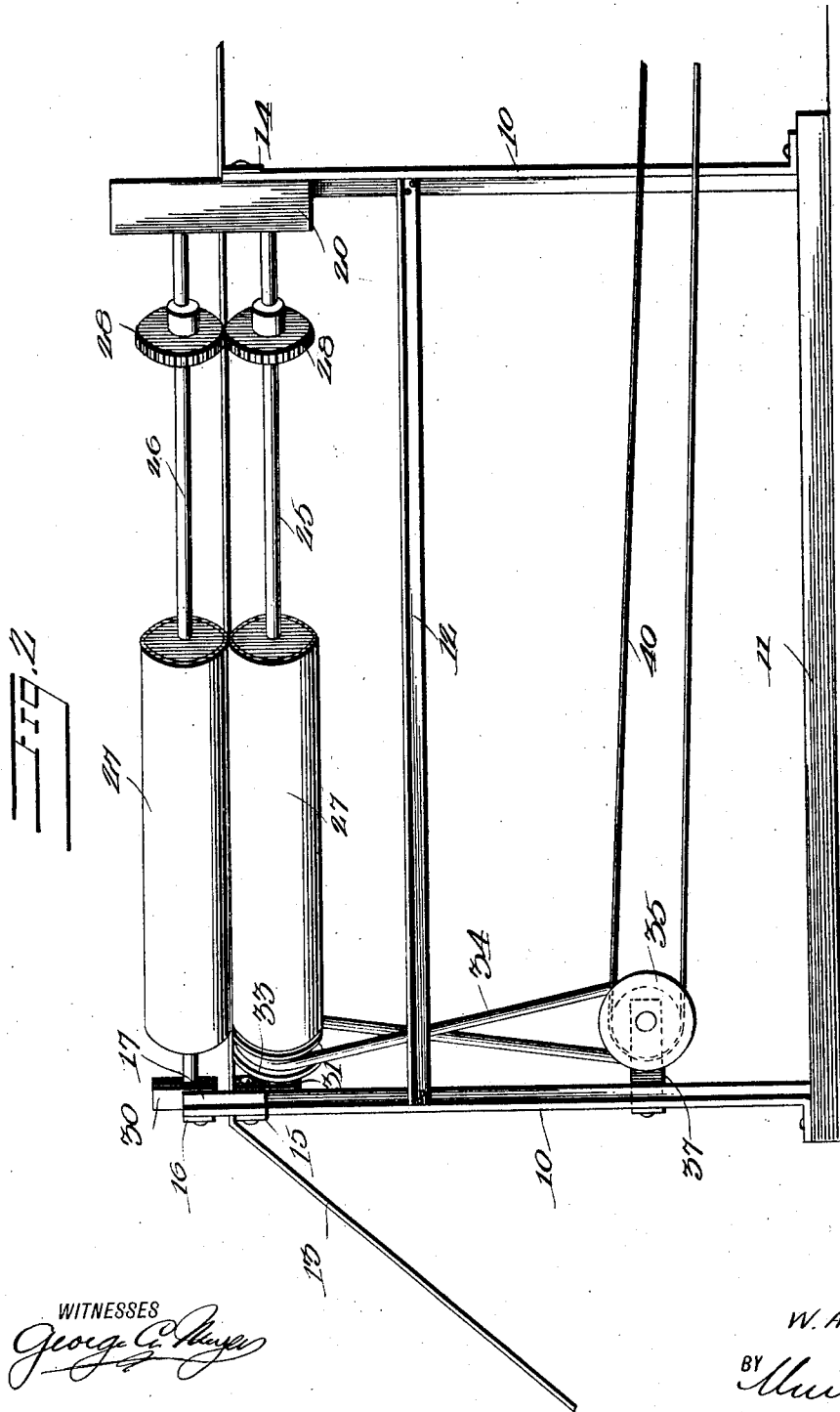
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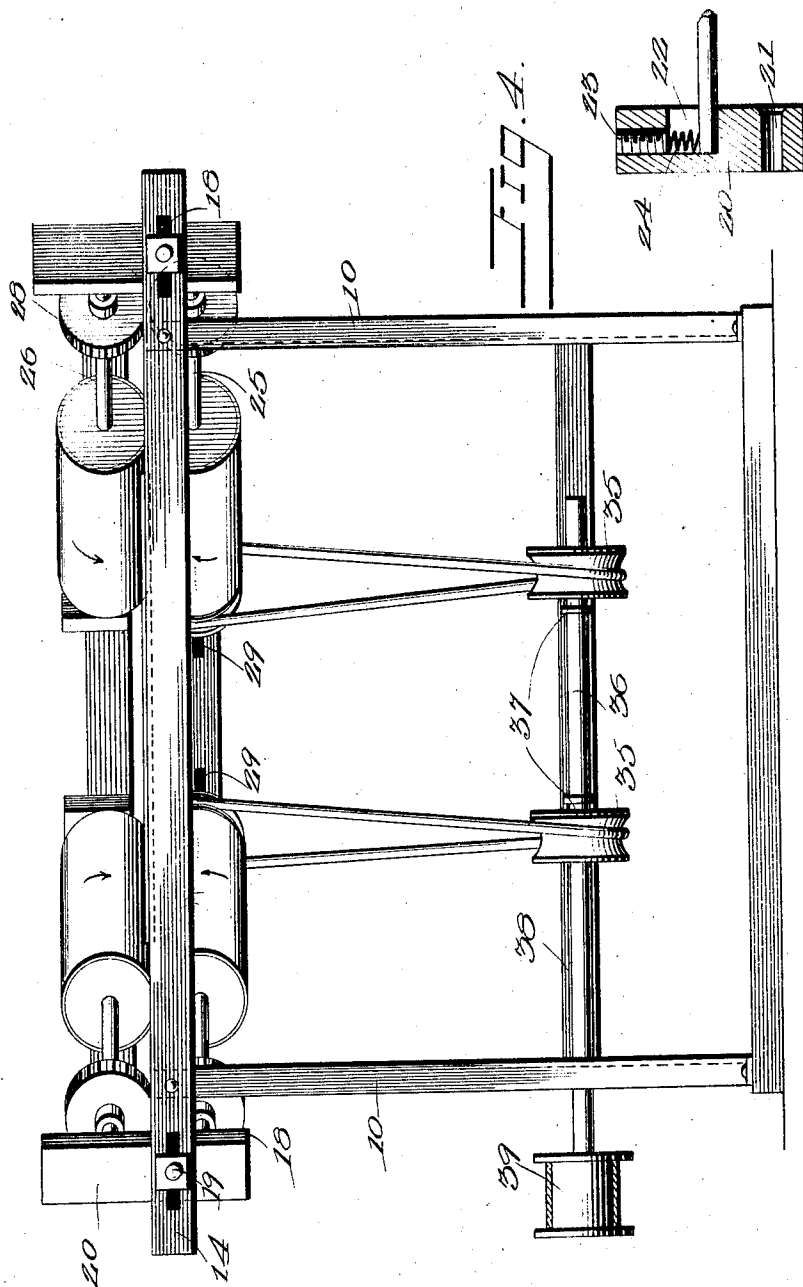
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5 SHEETS—SHEET 3

FIG. 3.



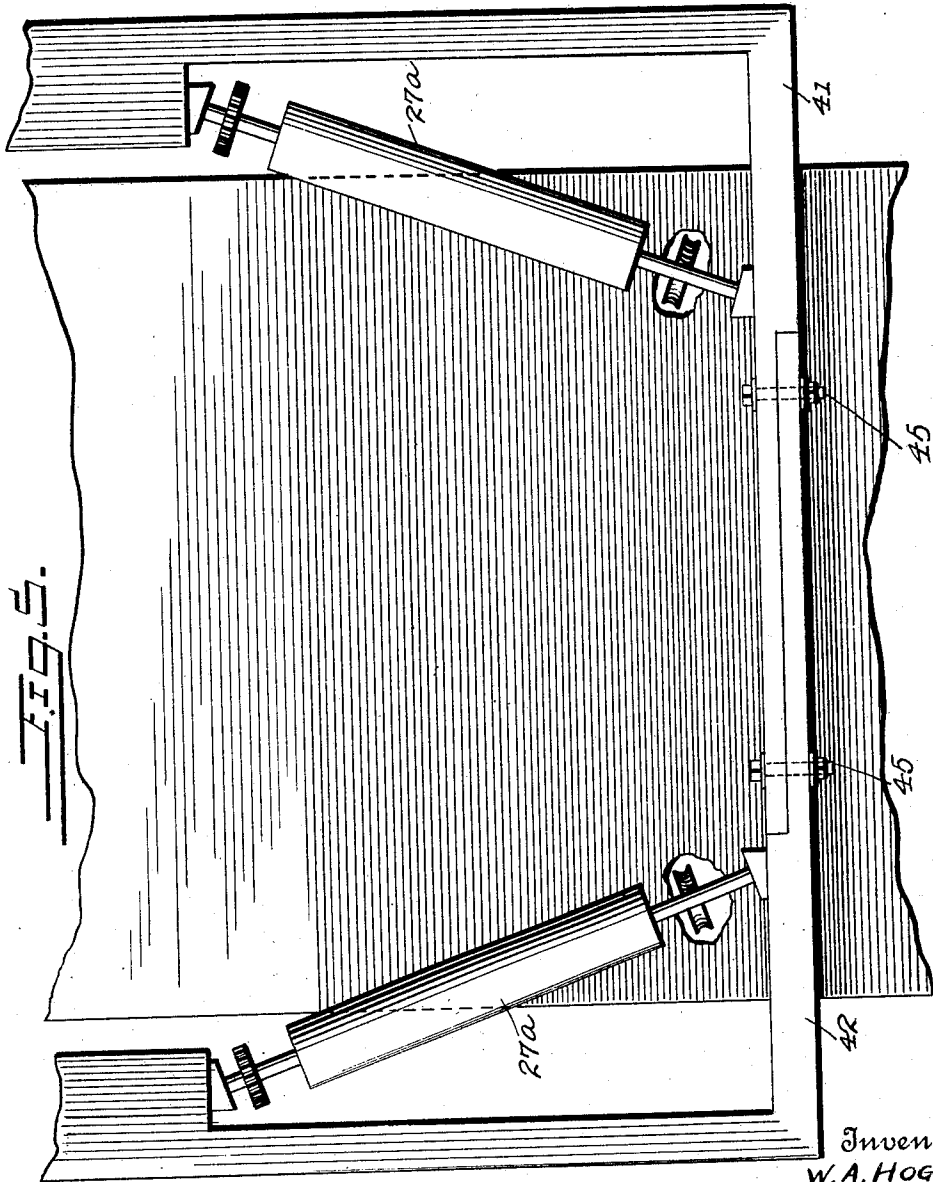
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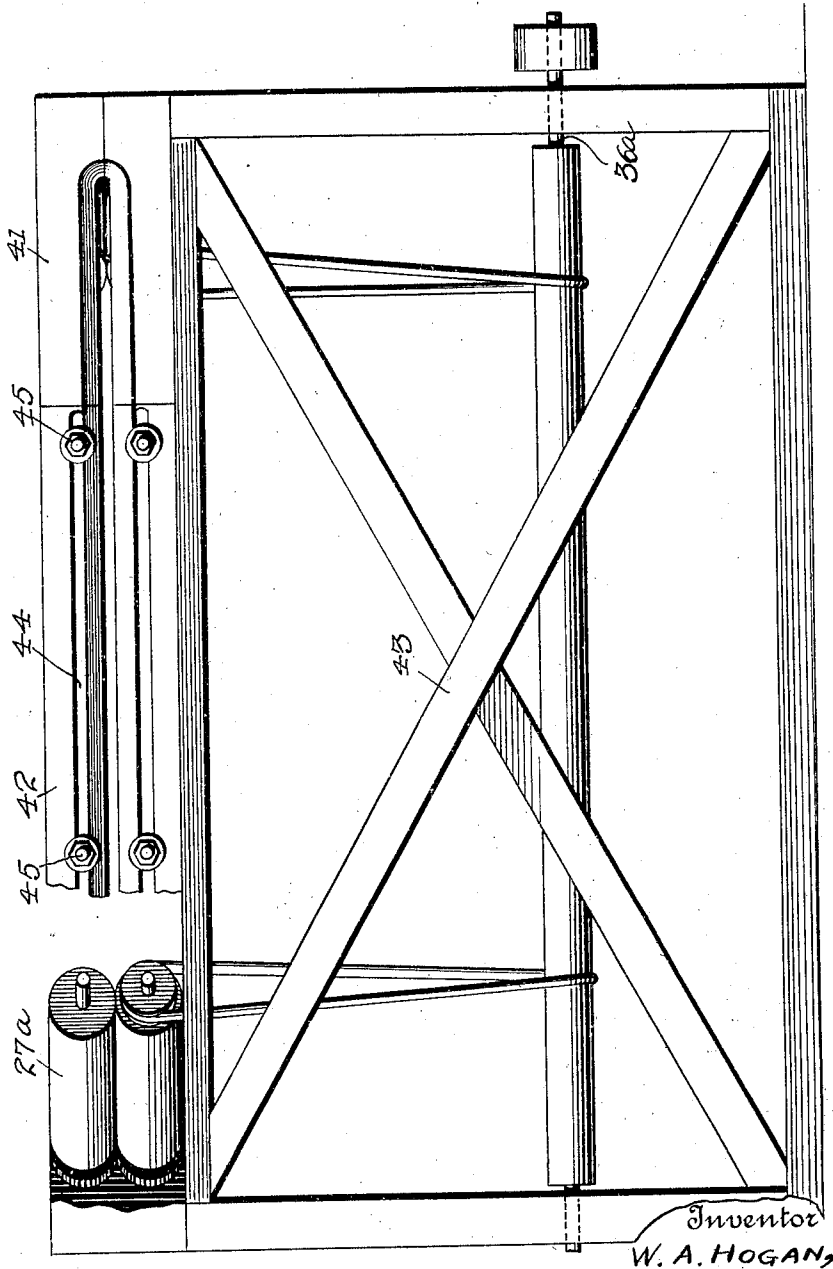
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5 SHEETS—SHEET 5.

FIG. 5.



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UNITED STATES PATENT OFFICE.

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CLOTH-GUIDING DEVICE FOR CLOTH-FINISHING MACHINES.

1,385,746.

Specification of Letters Patent.

Patented July 26, 1921.

Application filed June 24, 1920. Serial No. 391,495.

To all whom it may concern:

Be it known that I, WILLIAM ALFORD HOGAN, a citizen of the United States, and a resident of Danville, in the county of Pittsylvania and State of Virginia, have invented certain new and useful Improvements in Cloth-Guiding Devices for Cloth-Finishing Machines, of which the following is a specification.

10 My present invention relates generally to cloth guiding devices and more particularly to an apparatus designed to hold moving fabric out to a smooth surface and prevent wrinkling or doubling previous to its passage into the rolls of calender or other cloth finishing machines such as brushing machines and others well known in the finishing for instance of cotton fabrics, my object being the provision of a device which will not only hold the fabric and prevent doubling but will straighten out and smooth the cloth where the selvage has become wrinkled or folded.

25 To accomplish this object the invention proposes the use of pairs of fabric engaging rollers disposed in inclined relation with respect to one another and with respect to the longitudinal axis of the moving cloth, the rollers of each pair being in superposed parallel relation with connections completing positive drive of both the upper and lower rollers of each pair in relatively opposite directions and in a direction against the motion of the cloth so that with the selvages of the latter gripped between the rollers the frictional engagement therewith serves to smooth out the web preparatory to its passage into the finishing machine.

40 In the accompanying drawings forming a part of this specification and illustrating the invention,

Figure 1 is a top plan view,

Fig. 2 is a side elevation,

Fig. 3 is a front elevation,

45 Fig. 4 is a detail section through one of the bearings of the upper roller.

Fig. 5 is a partial top plan view, and

50 Fig. 6 is a front elevation showing a modified form of the invention as adapted to tentering machines.

Referring now to these figures my improved cloth guide includes a frame which consists of corner uprights 10 extending vertically from a supporting base or platform 11 which is mounted in any suitable manner adjacent to the calender rolls or cloth finish-

ing machine of suitable nature with which the guide is utilized, these uprights 10 being connected at points intermediate their ends by longitudinal side bars 12 paralleling the path of the moving web or cloth 13.

At their upper ends the uprights 10 are rigidly connected to forward and rear cross bars 14 and 15 and over these cross bars the web or fabric 13 moves, a second cross bar 16 being extended parallel with and spaced above the cross bar 15 at the rear of the frame, above the web 13, with its ends connected by vertical connecting pieces 17 to the ends of the lower rear cross bar 15.

The forward cross bar 14, as seen in Fig. 3, has lengthwise slots 18 in its end portions projecting beyond the forward uprights 10, and these slots adjustably receive the bolt connections 19 of a pair of upright bearing blocks 20 having inclined faces abutting the rear surface of the cross bar as seen in Fig. 1 and each having a lower bearing opening 21 and an upper vertically slotted bearing recess 22 the latter of which is in communication with a vertical opening threaded for the reception of a plug 23 adjustably engaging a spring 24.

The bearing openings 21 and recesses 22 respectively receive the forward ends of lower and upper roller shafts 25 and 26 which shafts incline inwardly toward one another and rearwardly in pairs, with the shafts of each pair in vertically spaced parallel relation, and each pair of which have contacting cloth covered rollers 27 at their rear portions which are thus disposed at angles to the web 13 and are arranged to receive the side portions of the web therebetween.

Adjacent to their forward ends and at points beyond opposite side edges of the web, the shafts 25 and 26 are provided with intermeshing gears 28 of the same size so that rotation of one shaft will be communicated to the other in such manner that all of the rollers 27 will have the same peripheral speed, these rollers being all of the same size also.

Like the forward cross bar 14, the rear cross bars 15 and 16 have slots 29, but these slots are located adjacent to and upon opposite sides of the center and attached thereto are bearing blocks 30 and 31 in vertically spaced relation, the lower bearing blocks 30 having bearing openings receiving the rear inner ends of the lower shafts 25 similar to

the bearing openings 21 of the blocks 20. The upper bearing blocks 30 have bearing recesses similar to the bearing recesses 22 of the bearing blocks 20, receiving the rear inner ends of the upper shafts 26 in vertically movable relation under control of springs and adjustably threaded plugs 32 similar to the springs 24 and plugs 23 of the bearing blocks 20 so that the upper rollers 27 will thus be pressed under tension of the springs engaging the end portions of their shafts, against the lower rollers, and the two pairs of rollers will be held in the forwardly diverging relation shown particularly in Fig. 1 whereby rotation thereof in the direction of the arrows in Figs. 1 and 3, will develop both lateral and longitudinal pull upon the web 13 being fed, with the result to be presently described.

At its inner rear end each of the lower rollers 27 is provided with a pulley 33 connected by a belt 34 with one of the spaced rollers 35 of a lower transverse shaft 36. This shaft 36 is journaled in brackets 37 extending from a lower cross bar 38 between the rear uprights 10, the shaft having one projecting end provided with a driven pulley 39 which may be connected by a belt 40 to any suitable source of power.

Thus in operation rotation is transmitted through the driven shaft 36 to the lower rollers of the two pairs and from these rollers to the upper rollers through the intermeshing gears 28.

As indicated by the arrow on the web 13 in Fig. 1, the web is fed across the rear cross bar 15 and forwardly between the inclined rollers and over the forward cross bar 14, the rollers 27 being at the same time rotated against the movement of the web to the extent that the frictional engagement of their cloth covered surfaces with the web exerts a pull both laterally and longitudinally of the web, the longitudinal pull being in a direction opposite to that of the movement of the web.

The above in view of the fact that both of the rollers of each pair are positively rotated, brings about effective straightening and maintenance of a straightened web, smoothing the same out uniformly and evenly to the extent of removing all wrinkles preparatory to its passage into the calender or other cloth finishing machine.

In applying the invention to a tentering machine which operates to stretch out the cloth, the cloth guides of my invention necessarily spread apart or contract constantly by virtue of the condition of the fabric.

The foregoing is the essential feature of the

operation of a tentering machine and for this reason I may have the rollers supported in the upper portion of a frame which is in laterally shiftable sections, both movable with respect to the lower supporting portion of the frame. I prefer to carry in this modification the same construction in other respects as that previously described. Thus as seen in Figs. 5 and 6, the rollers 27^a of the modified form are driven through the same connections as previously described, but are journaled in the side sections 41 and 42 of an upper frame, laterally shiftable on and with respect to a relatively stationary lower frame portion 43, the sections 41 and 42 of the upper portion of the frame having slotted overlapping inner extensions, whose slots appear at 44 in Fig. 6 and receive guide bolts 45 therethrough.

It is obvious from this that in the modified form the sections of the upper frame carrying the cloth engaging rollers are movable laterally toward and away from one another and that this movement is permitted by virtue of the flexible driving connections between the lower rollers of the two pairs and the pulley of a lower driven shaft 36^a.

It is to be understood that the rollers 27^a will be yieldingly pressed toward one another by substantially the means before described with respect to the rollers 27, and that as to its other features with the exception of lateral adjustability, the form of the invention shown in Figs. 5 and 6 will be the same as that shown in Figs. 1 to 4 inclusive.

I claim:

1. A device for guiding and smoothing fabric webs comprising a frame including lengthwise slotted cross bars forming guides for the web, bearing members adjustably connected to the cross bars through the slots thereof, shafts journaled at their ends in the bearing members and vertically spaced in pairs upon relatively opposite sides of and inclined with respect to the longitudinal axis of the frame, and means for positively driving each of the rollers of both pairs in a direction adapting the same to pull in opposition to the movement of the web passing therebetween.

2. In a device of the character described, divergently disposed laterally spaced and relatively adjustable pairs of upper and lower rollers adapted to receive the side portions of a moving cloth web therebetween, and means to positively drive both the upper and lower rollers of each pair in a direction adapting the same to pull in opposition to the movement of the web.

WILLIAM ALFORD HOGAN.