No. 678,121. Patented July 9, 1901.

W. I. LEWIS.

AUTOMATIC CLOTH GUIDING DEVICE.

(Application filed Oct. 8, 1900.)

(No Model.) 2 Sheets—Sheet 1.

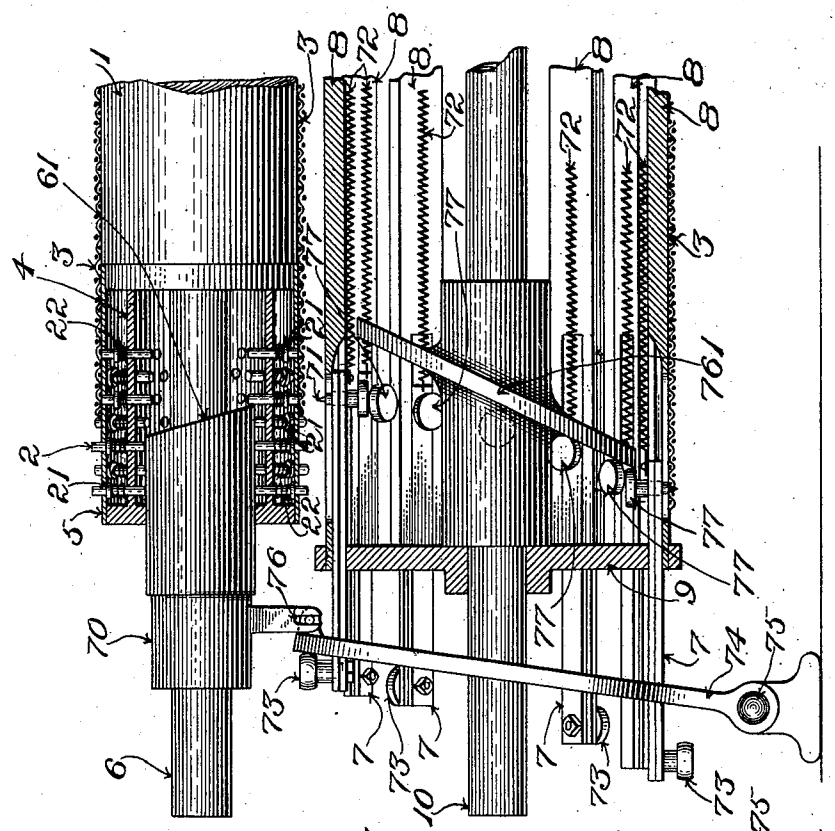


Fig. 2.

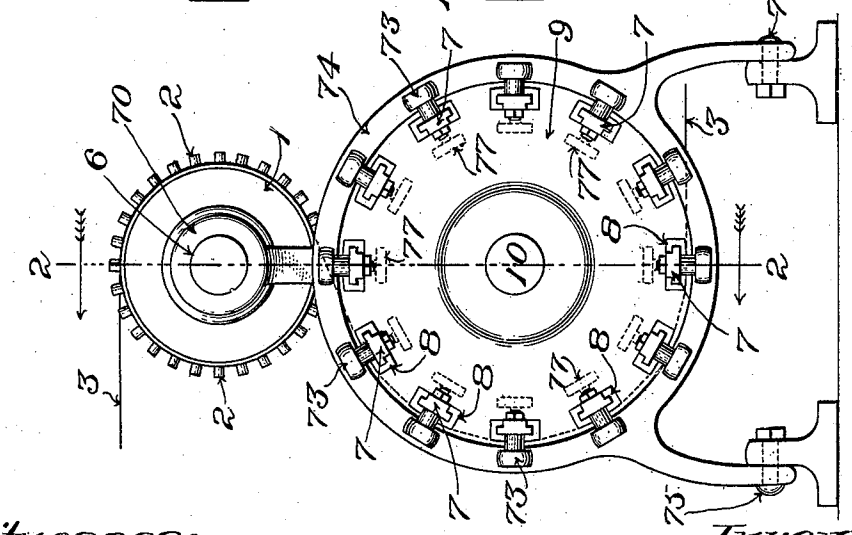


Fig. 1.

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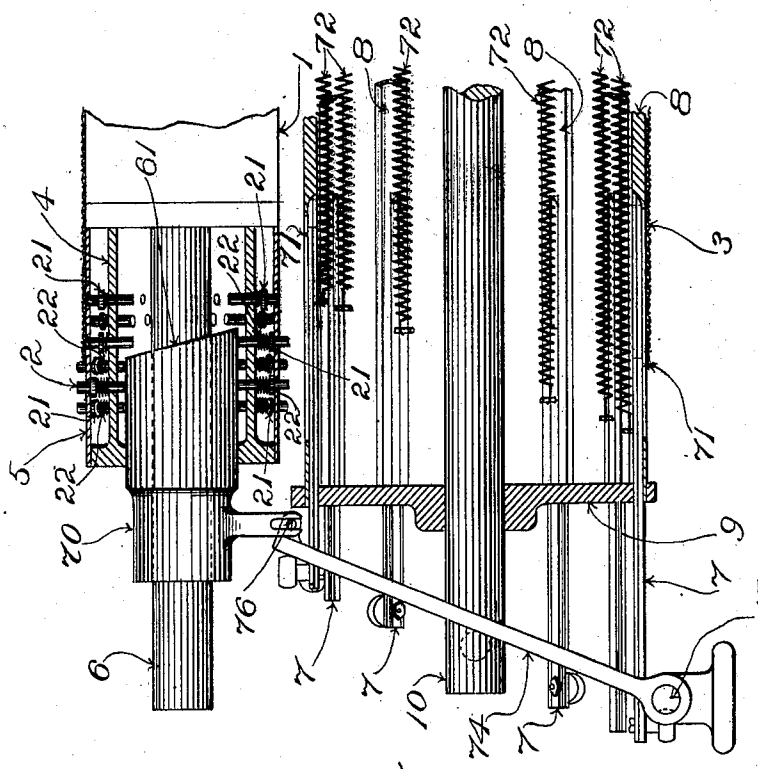


Fig. 4.

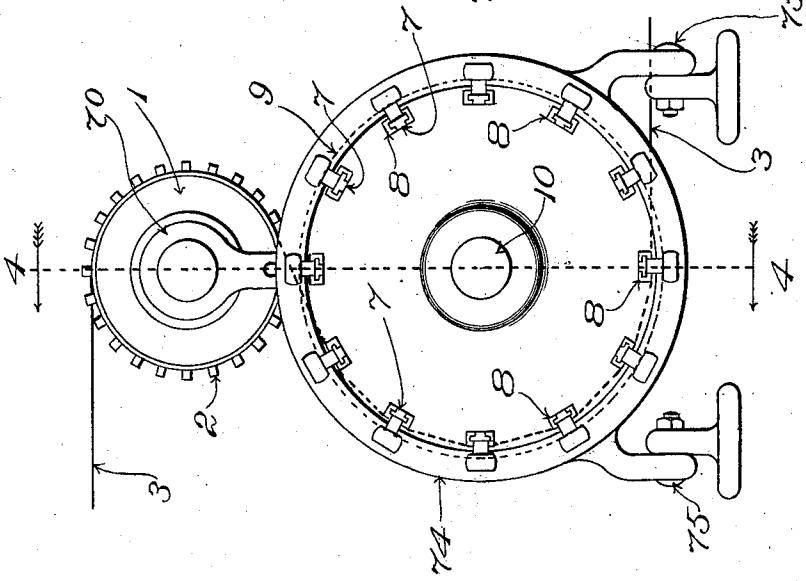


Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLARD I. LEWIS, OF WALPOLE, MASSACHUSETTS.

AUTOMATIC CLOTH-GUIDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 678,121, dated July 9, 1901.

Application filed October 8, 1900. Serial No. 32,343. (No model.)

To all whom it may concern:

Be it known that I, WILLARD I. LEWIS, a citizen of the United States, residing at Walpole, in the county of Norfolk, State of Massachusetts, have invented a certain new and useful Improvement in Automatic Cloth-Guiding Devices, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention consists in improved means of causing the selvages of a moving continuous web of cloth or the like to follow along predetermined lines in being operated upon or wound.

In the accompanying drawings I have represented my invention embodied in the best forms which I have yet contrived.

Figure 1 of the drawings is an end elevation of one embodiment of the invention. Fig. 2 is a sectional view of the said embodiment on the plane indicated by the dotted line 2 2, Fig. 1. Fig. 3 is an end elevation of a second embodiment. Fig. 4 is a sectional view on the plane indicated by the dotted line 4 4, Fig. 3.

My improved means aforesaid comprises a detector-roll by which the position of the advancing selvages of the traveling web is ascertained mechanically, a traveling series of selvage bars or blocks at each edge of the said web constructed to engage with the selvage portion thereof, and automatic devices under the operative control of the detector-roll whereby the said selvage bars or blocks, as they travel in unison with the onwardly-moving cloth, are in turn caused to become properly engaged with the corresponding selvage of the said cloth, the said selvage bars or blocks having given thereto for this purpose an inward movement varying according to the position occupied by the selvage as the respective bars or blocks approach the same, and then the said bars or blocks being caused to move outwardly to the required point, and thereby to pull the selvage out to the predetermined path.

Having reference to the drawings, 1 designates the detector-roll. Only one end thereof is shown. At each end the said detector-roll is furnished with a set of radially-movable detector-pins 2 2. The cloth 3 is caused to make contact with a portion of the periphery of the detector-roll 1 and by its pressure against the outer ends of some of the detector-pins 2 2 forces inwardly the particular detector-pins which it touches. The set of detector-pins extends around the detector-roll and also some distance lengthwise of the detector-roll, so that when the cloth sways transversely as it passes onto the detector-roll its selvage will act upon successive pins at various distances from the end of the detector-roll. Herein the detector-roll is shown formed with two concentric shells 4 5, having holes therethrough in which the detector-pins 2 2 are placed. The said detector-pins 2 2 are provided with collars or the like, as at 21 21, springs 22 22 being located between the said collars and the inner shell 4 and arranged to act to force the detector-pins radially outward. The contact of the collars 21 21 with the outer shell 5 limits the movement of the detector-pins outwardly.

The detector-cylinder 1 is mounted upon a shaft 6 and, if desired, may be made fast to the said shaft.

70 is a sleeve mounted upon shaft 6, with capacity to move lengthwise of the latter. This sleeve is arranged to project within the set of detector-pins 2 2 and is formed with a cam-face 61 to coact with the inner portions of the said detector-pins. Normally the said inner portions are held by the springs 22 22 radially outward beyond the periphery of the sleeve; but when a detector-pin is held pressed inward by the cloth 3 in contact with the periphery of the detector-roll the inner portion of such detector-pin will project into position to engage with the cam-face 61 of the sleeve. In the rotation of the detector-roll the contact of the detector-pin with the said cam-face 61 will give to the sleeve a position lengthwise of the shaft 6 corresponding with that of the said detector-pin lengthwise of the detector-roll 1.

The series of selvage bars or blocks is designated 7 7. In the present case I have illustrated the said series as applied to a positioning-cylinder comprising longitudinal bars 8, heads 9, and a shaft 10. The selvage bars or blocks 7 7 are mounted on the said cylinder with capacity to slide lengthwise of the latter and are shown provided with pins 71 71 to engage with the cloth 3. Any other known

or preferred means of engaging with the selvage portion of the cloth may be utilized in practice in connection with the selvage bars or blocks.

As the cloth 3 passes onto the positioning-cylinder from the detector-roll 1 the pins 71 71 of the respective selvage bars or blocks must be caused to engage with the cloth immediately adjacent the selvage thereof. To enable this to be effected properly, whatever may be the position of the selvage it passes to the positioning-cylinder, I control the selvage bars or blocks from the sleeve 70 aforesaid. Thus in the present instance springs 72 72 are connected with the selvage bars or blocks 7 7 and arranged to draw the latter toward the middle of the width of the cloth. The selvage bars or blocks are furnished with pins or antifriction-rolls, as at 73 73, which are arranged to make contact with an annulus 74. The said annulus is hung or pivoted, as at 75, and is concentric with the positioning-cylinder. It is connected loosely, as at 76, with a depending arm of sleeve 70. The position assumed by the annulus 74 will be determined by that which the sleeve 70 is caused to take under the action of the detector-pins 2 2 against its cam-face 61. The force of the springs 72 72 is transmitted to the annulus 74 in consequence of contact of the pins or antifriction-rolls 73 73 with said annulus, and this force acts with a tendency to draw the annulus and the sleeve 70 inward toward the middle of the width of the cloth. Thus the sleeve is held drawn as far inward as is permitted by its contact with the inner ends of the detector-pins, which for the time being are held retracted by the pressure of the cloth upon their outer ends.

Cam action is utilized for the purpose of causing the selvage bars or blocks to be forced outward toward the end of the positioning-cylinder after they have been engaged with the selvage of the cloth. Thus in Fig. 2 an oblique cam 761 is shown fast upon shaft 10, which in this instance does not rotate. This cam acts against pins or antifriction-rolls, as at 77 77, with which the selvage bars or blocks are furnished. In Fig. 4 the cam 761 is dispensed with and annulus 74 is arranged to act as a cam.

It is immaterial so far as my invention is concerned whether the detector-roll and positioning-cylinder are rotated positively or by the pull of the cloth.

It will be perceived that the action of the inwardly-projecting ends of the pins carried by the detector-roll determines the position which is occupied by the movable sleeve, and in consequence of the connection of the said sleeve with the annulus the position of the annulus is also determined. The position of the annulus in turn determines the extent to which the pin-carrying blocks on the stretching or guiding roll or cylinder shall move inwardly toward the middle of the length of the said roll or cylinder. By the conjoint action of these parts the pins of the movable blocks are so governed that they are caused always to enter the edge portions of the cloth at a predetermined distance from the selvage, and inasmuch as the cam action operates to move the said blocks outward, so as to deliver the edge or selvage of the cloth at a predetermined line, it will be obvious that the devices will act automatically to cause the cloth on leaving the stretching or guiding roll or cylinder to move in a predetermined line, and thereby the cloth will be delivered accurately. In case the devices described are employed in connection with a winding-roll the cloth will be caused to wind uniformly upon the said roll and without lateral deviation.

I claim as my invention—

1. The improved cloth-guiding means, comprising, essentially, a detector-roll, contrived to ascertain mechanically the position of the selvage of the cloth, a traveling series of selvage bars or blocks, and automatic devices under operative control of the said detector-roll whereby the said selvage bars or blocks are caused to move transversely with relation to the width of the cloth, engage with the selvage of the latter, and draw said selvage out to the predetermined path, substantially as described.

2. The improved cloth-guiding means, comprising, essentially, a detector-roll having a set of cloth-operated movable detector-pins, a traveling series of selvage bars or blocks, and automatic devices whereby under the operative control of said detector-pins the said selvage bars or blocks are caused to engage with the selvage of the cloth and draw it out to the predetermined path, substantially as described.

3. The improved cloth-guiding means, comprising, essentially, the detector-roll with its cloth-operated movable detector-pins, the sliding part 70 with its cam-face coacting with the said pins, the series of selvage bars or blocks, the springs connected with the said selvage bars or blocks, and the annulus connected with the said sliding part 70, substantially as described.

4. The improved cloth-guiding means, comprising, essentially, the detector-roll with its cloth-operated movable detector-pins, the sliding part 70 with its cam-face coacting with the said pins, the series of spring-actuated selvage bars or blocks, and controlling devices whereby the inward movement of the said selvage bars or blocks is determined in accordance with the position of said part 70 and the same are positively moved outward to a fixed extent, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLARD I. LEWIS.

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