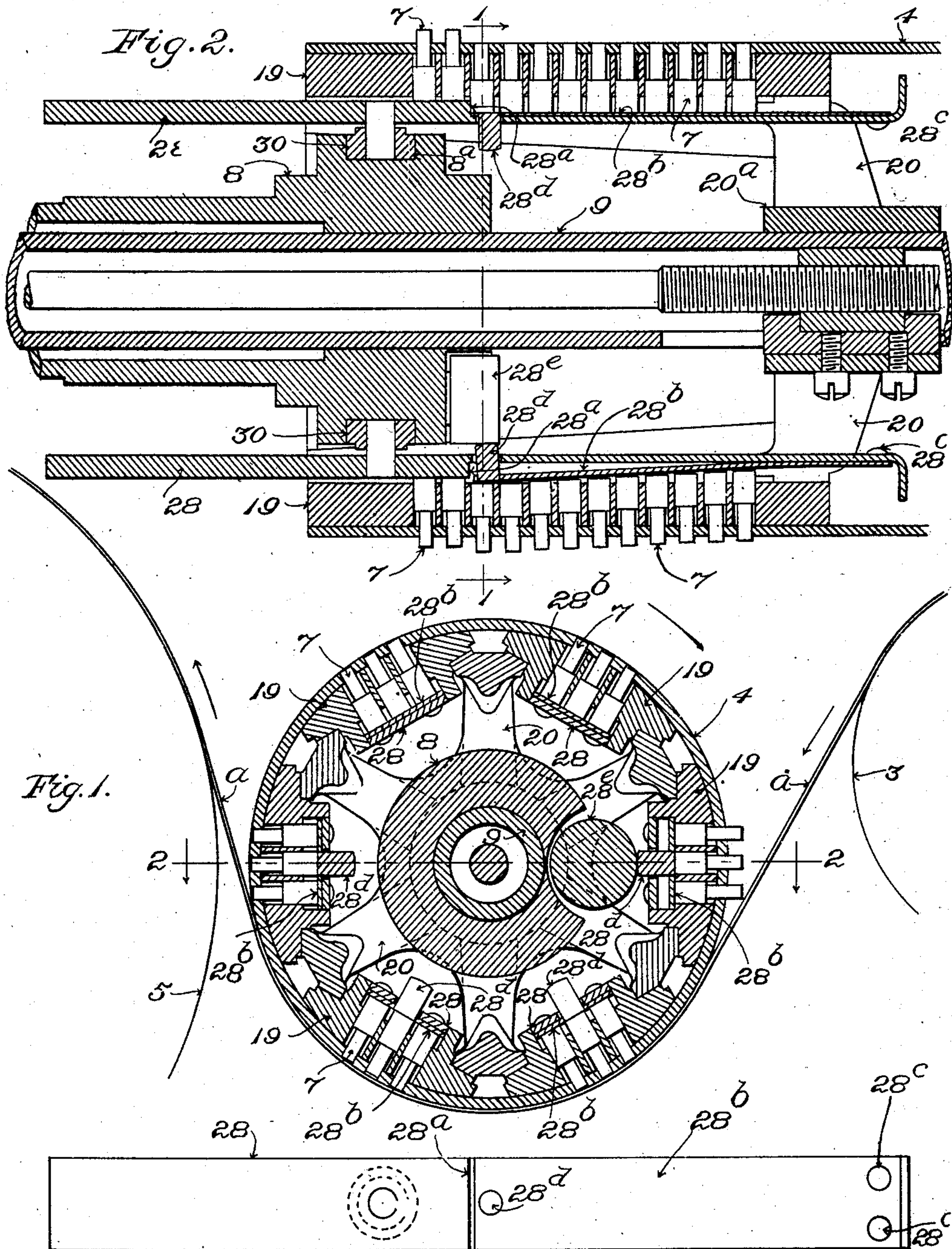


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 AUTOMATIC WEB GUIDING DEVICE.
 APPLICATION FILED JAN. 3, 1910.

973,945.

Patented Oct. 25, 1910.



Witnesses:
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Fig. 3.

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UNITED STATES PATENT OFFICE.

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AUTOMATIC WEB-GUIDING DEVICE.

973,945.

Specification of Letters Patent.

Patented Oct. 25, 1910.

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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 Web-Guiding Devices, of which the following is a specification, reference being had therein to the accompanying drawings.

10 The invention is an improvement in the automatic web-guiding devices of United States Letters Patent No. 678,121 granted to me under date of July 9, 1901, and No. 905,720, granted to me under date of December 1, 1908, and consists in means for mechanically thrusting out the detector-pins of detector-rolls on the order of those of the said patents. The purpose in providing means for thus actuating the detector-pins is to prevent the latter from sticking in an inwardly retracted position in the path of the engaging member or members of the shifting devices for the selvage-positioning devices, so as to result in improper working.

25 For the proper operation of automatic web-guiding devices such as aforesaid, it is important that those pins of the detector-roll which are located at and adjacent the places where the oncoming portions of the selvages or margins of the advancing web lie against the exterior of the detector-roll should occupy their outward position just prior to being carried around by the rotation of the roll to the point at which the web begins to bear upon the roll. The pressure of the web and its selvages or margins upon the outer ends of the pins which are covered thereby moves such pins inwardly, as explained in the specifications of the patents aforesaid. Those pins which are immediately beyond the selvages or margins of the web, and not covered thereby and thus held in an inward position, should occupy a radially-projected position clear of the acting portions of the member or members within the inclosure of the detector-roll which, through engagement with the inwardly held pins, brings or bring about the automatic adjustment of the selvage-positioning devices. In Patent No. 678,121 the detector-

pins are actuated by means of springs, whereby the pins which have been pressed inward by the passing web are moved by spring-pressure radially outward again as soon as they are released from the pressure of the web in the turning movement of the detector-roll. In Patent No. 905,720 the springs are dispensed with and the pins are left to be operated by gravity. It has happened in the use of machines embodying the inventions of the patents that as a result of handling wet goods, and of accidental wetting of the machine, corrosion of the detector-pins and other parts of the detector-roll has occurred, resulting in more or less clogging of the holes or pockets within which the pins work. Too abundant oiling, also, results in an accumulation of waxy or sticky material with the same results. As the pins employed are quite light, their outward movement is easily prevented, especially when gravity alone is relied upon to occasion such movement, or when light springs are employed.

The general object of the present invention is to render the action of the detector-pins and associated parts more reliable and certain than heretofore, and this I accomplish by providing mechanical means for causing the detector-pins to occupy their outward position at the proper time and place in the rotation of the detector-roll.

The invention consists, therefore, in mechanical thrusting-out means, as I will now proceed to explain.

The drawings show the preferred embodiment of the invention.

Figure 1 shows in cross-section a detector-roll containing the said preferred embodiment, it indicating also the path of the cloth in passing to, partly around, and from the said roll, as well as a portion of an adjacent guide and tension-roll, and a portion of the path of rotation of the selvage-positioning devices. Fig. 2 is a view of the detector-roll in horizontal section on line 2, 2, of Fig. 1. Fig. 3 is an elevation of one of the reciprocating shouldered bars of Figs. 1 and 2, showing the spring which is applied thereto.

Referring briefly to the old parts and features,—at 3, Fig. 1, is a portion of a rotatable guide and tension-roll, partly around which the web α passes on its way to the detector-roll, the shell of which is shown at 4.

At 5, Fig. 1, is indicated a portion of the path of rotation of the selvage-positioning devices to which the web passes after passing partly around the detector-roll and leaving the latter. The radially-movable detector-pins of the detector-roll are shown at 7, 7, their inner portions occupying holes or pockets in bars 19, 19, on which the shell 4 is mounted, and their reduced outer ends working in holes made through the shell 4, the said bars 19, 19, being fixed upon the arms 20, 20, in connection with the head 20^a which is sleeved upon the shaft 9 of the detector-roll. The cam-sleeve or shifter-cam 8 of Patent No. 905,720 is shown in part in Figs. 1 and 2, and 28, 28, are the longitudinally reciprocating bars of said patent, carrying cam-rolls 30 working in the cam-groove 8^a of the shifter-cam, the said bars being shouldered at 28^a to engage with detector-pins occupying inward positions.

In the present embodiment of the invention, in carrying the invention into effect, I provide devices by means of which as the detector-roll rotates the detector-pins, just prior to arrival at the point where the oncoming web first contacts with the exterior of the detector-roll, are pushed or thrust outwardly, the pins being then freed to the control of the web so as to permit those pins which receive the pressure of the web upon their outer ends to be pressed radially inward thereby. The employment of mechanical thrusting-out means obviates all sticking of the pins in an inward position. Thus, upon the reduced inner portion of each of the reciprocating bars 28 is mounted a strip 28^b of spring material, the inner end of such strip being made fast to the inner end of the bar by rivets 28^c, 28^c. The outer end of each strip 28^b is provided with a projection 28^d that extends radially inward far enough to engage, in the rotation of the detector-roll, with a roll 28^e which is mounted upon the non-rotating shifter-cam 8. The roll 28^e acts as a cam, and as each bar 19 of the detector-roll is carried in turn around past the same the strip 28^b of the corresponding reciprocating bar 28 is forced radially outward in consequence of the engagement of the projection 28^d of such strip with roll 28^e. This is shown in Figs. 1 and 2. In being forced outward, the strip 28^b pushes radially outward ahead of it those pins with which it registers and engages. The roll 28^e is so located that this action takes place in connection with each group of pins in turn just before such group arrives at the point where the web takes bearing

against the exterior of the detector-roll. As the projection 28^d of a given strip leaves the roll 28^e, the strip is released and allowed to be moved radially inward, thereby freeing the pins of the corresponding group to the action of the web against their outer ends.

Cam-roll 28^e is of a length corresponding to the extent of the reciprocating strokes of the shouldered bars 28, 28, which are produced through the engagement of rolls 30, 30, carried by such bars, in the cam-groove of the shifter-cam 8. Consequently the projections 28^d, 28^d, do not pass off at either end of the said cam-roll during such strokes. Inasmuch as the cam-roll is carried by the shifter-cam, it accompanies the shifter-cam as the latter is automatically adjusted or shifted along shaft 9 in consequence of swaying or wandering of the selvage or margin of the web in a transverse direction, thereby keeping the cam-roll at all times in working relations with the projections 28^d, 28^d. Usually the full thrusting-out action of the strip 28^b is really required only in the case of the detector-pins next the shoulder 28^a of bar 28, and those next adjoining. Hence the strip when fully thrust out may occupy an oblique position as in Fig. 2 of the drawings.

The invention is not necessarily restricted in all cases to the precise construction herein shown and described.

What is claimed as the invention is:—

1. The combination with the detector-roll and the detector-pins which are adapted to be pressed inward by the web making contact with the exterior of such roll, of means for positively thrusting-out the detector-pins into their projected position.

2. The combination with the detector-roll and the detector-pins which are adapted to be pressed inward by the web passing such roll, of a thrusting-out cam by which the said pins are moved outward.

3. The combination with the detector-roll and its detector-pins, and a shifter-device which coöperates with those pins having their positions determined by the web passing such roll, of means located adjacent the place of such coöperation whereby to move the pins into positions permitting them to be carried around without coercion with the shifter-device unless otherwise controlled by the said web.

4. The combination with the detector-roll, the detector-pins, the reciprocating shifter-bars, and the shifter-cam, of movable members connected with the said shifter-bars, adapted to engage the said pins, and means in connection with the said shifter-cam for actuating the said members to thrust out the pins.

5. The combination with the detector-roll, the detector-pins, the reciprocating shifter-bars, and the shifter-cam, of movable members connected with the said shifter-bars,

and a roll connected with the shifter-cam and acting as a cam to actuate the said members to thrust out the pins.

5 6. In web guiding devices, the combination with a plurality of detector members governed by a traveling web and disposed in a rotating series, of means for positively moving said members into detecting posi-

tion after being displaced therefrom by said web.

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

WILLARD I. LEWIS.

Witnesses:

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