Aug. 7, 1928.

1,680,190

G. F. WIKLE

WEB GUIDING MECHANISM

Filed April 17, 1924

2 Sheets-Sheet 1

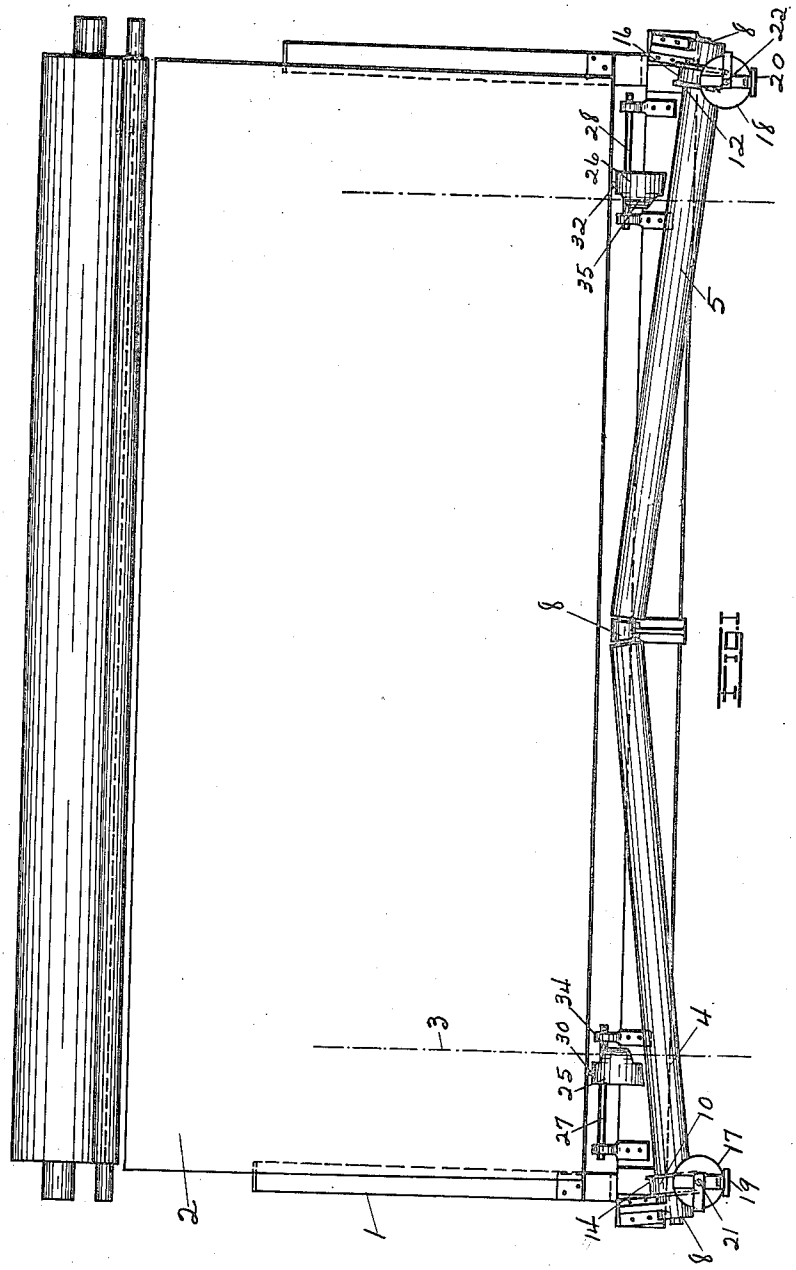


FIG. 1

GEORGE F. WIKLE
INVENTOR

BY Robert M. Harney
ATTORNEY

Aug. 7, 1928.

1,680,190

G. F. WIKLE

WEB GUIDING MECHANISM

Filed April 17, 1924

2 Sheets-Sheet 2

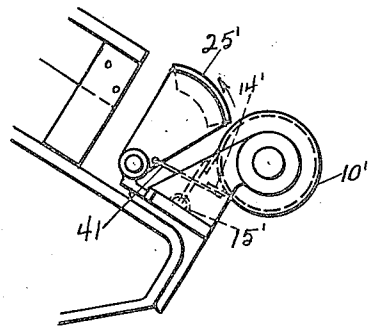


FIG. III

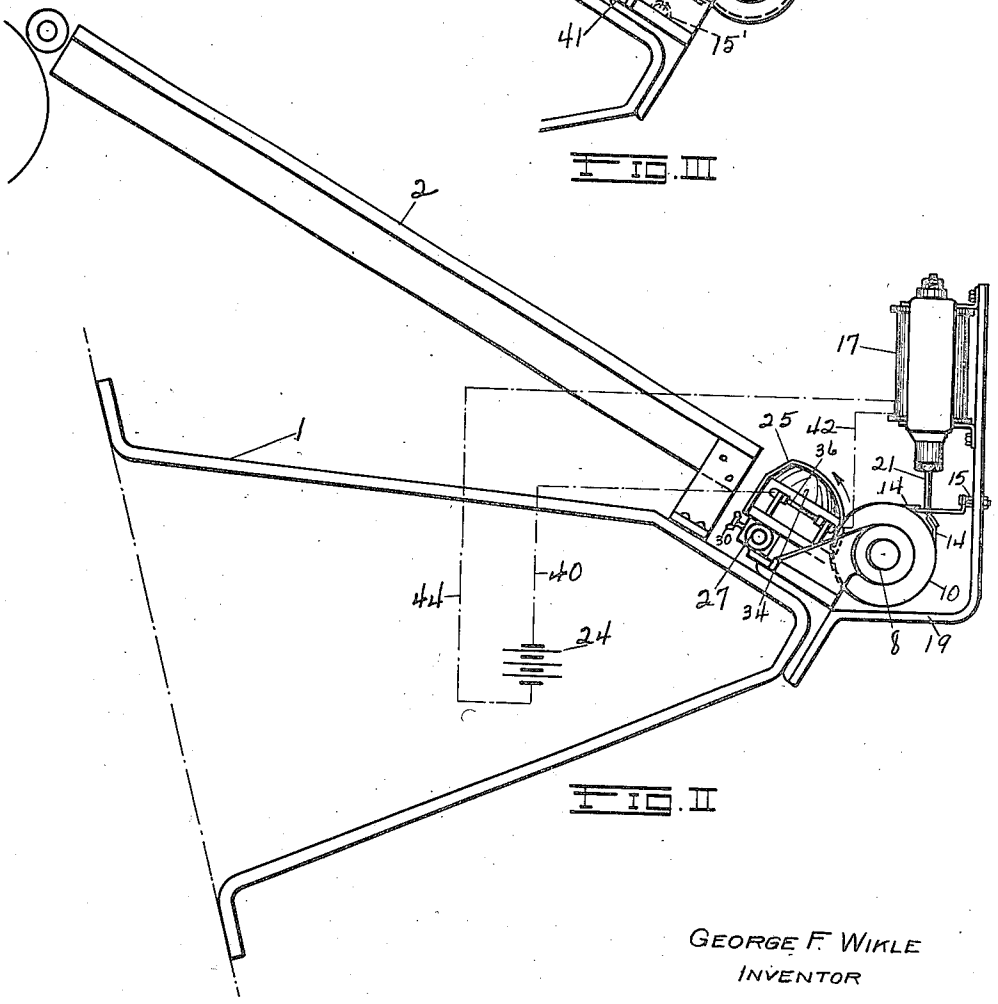


FIG. II

GEORGE F. WIKLE
INVENTOR

BY Robert D. Harvey
ATTORNEY

Patented Aug. 7, 1928. 1,680,190

UNITED STATES PATENT OFFICE.

GEORGE F. WIKLE, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO THE FISK RUBBER COMPANY, OF CHICOPEE FALLS, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

WEB-GUIDING MECHANISM.

Application filed April 17, 1924. Serial No. 707,157.

My invention relates to web guiding means and more particularly to a device of that character which automatically maintains a moving web in longitudinally aligned position.

The objects of my invention will be evident from the specification and claim.

In the drawings I have shown an illustrative embodiment of my invention as applied to the receiving table of a bias cutter, but it will be understood that my invention is in no way limited to such use, and may be used in any connection where it is desired to control the movement of a continuously or intermittently moving web.

Figure 1 is a plan view,

Figure 2 is a side elevation on an enlarged scale, and

Figure 3 is a detail view of a modified form.

Referring to the drawings 2 designates the receiving table of a bias cutting machine the frame of which is partly shown at 1. The web indicated at 3, is led to the table over angularly positioned rollers 4 and 5 carried in suitable bearings as at 8. As shown in Figure 1 rolls 4 and 5 make an obtuse angle with respect to each other with the apex extended in the direction of travel of the web. This angular relation exerts a spreading action on the fabric due to a tendency to shift the portions of the web overlying the rolls in opposite directions. This tendency is normally balanced. Rolls 4 and 5 are freely and independently rotatable in their bearings and the outer ends of the shafts of these rollers are provided with brake drums 10 and 12, respectively, about which brake bands 14 and 16 are positioned. Brake bands 14 and 16 are adapted to be tightened about their respective drums by any suitable means such as solenoids 17 and 18 carried in frames 19 and 20 secured to frame 1. The solenoids are provided with cores 21 and 22 secured to the free ends of the brake bands, the other ends of the bands being anchored to frames 19 and 20 as at 15.

The solenoids are in electric circuits which include a suitable source of current such as batteries 24, as diagrammatically shown in Figure 2. Positioned adjacent the edges of the web as it passes over table 2 are triangular shaped frames or actuators 25 and 26 adjustably mounted on rods 27 and 28 by set screws 30 and 32, to accommodate various widths of fabric. Actuators 25 and 26 are provided with inclined members 34 and 35 which prevent wrinkling of the edges of the fabric as the latter rides onto the surface of the actuators. Carried in the actuators 25 and 26 are mercury switches 36 of conventional type. It will be understood that the controls of rolls 4 and 5 are exactly similar and the specific description of one applies to the other.

The control and operation is best shown in Figure 2. One pole of battery 24 is connected by a suitable conductor 40 to one terminal of switch 36 the other terminal being connected to one terminal of solenoid 17 by conductor 42. A conductor 44 connects the other terminal of the solenoid to the other pole of the battery. It will be evident that when actuator 25 is rocked in the direction of the arrow in Figure 2 by the fabric passing over it the mercury switch closes the circuit, energizes the solenoid and thereby tightens brake band 14, retarding or preventing the free rotation of roll 4. When web 3, as it moves over table 2, for any reason leaves its central position, as shown in Figure 1, an edge of the web rides onto either actuator 25 or 26 causing such actuator to tilt forward, which closes the circuit as above described, and applies restraint to the roll 4 or 5 as the case may be. The immediate effect is that the web shifts transversely toward the freely rotating roll. This effect I believe is due in part to the resistance imposed to the movement of half the web but mainly to the fact that the balance of the tendencies to opposite transverse movement imparted by the angular position of the rolls has been disturbed. As soon as the web again becomes centered the actuator frame is released, breaking the circuit, releasing the brake band and again permitting free rotation of both rolls, thus restoring the balanced condition of travel of the halves of the web.

The restraining influence on the web at any given point is perhaps slight but may extend over a substantial portion of the width of the web. The centering of the web is therefore achieved without placing appreciable strain on the web material and without tendency to distort the structural elements of the web.

In Figure 3 I show a modified form in which a mechanical connection is substi-

tuted for the electrical control above described. In this figure actuator 25′ is connected by link 41 to the free end of the brake band 14′, the other end of which is anchored to the frame at 15′. As is evident rotation of the actuator in the direction of the arrow will tighten band 14′ about drum 10′ for the purpose and with the result previously described.

I claim:

A device of the character described comprising two independently rotatable angularly positioned rolls over which a moving web is adapted to pass, independently electrically operated brake means associated with each of said rolls, actuators, pivoted for movement in the direction of web travel, positioned closely adjacent said rolls and adjacent the edges of the web at a point where the latter are unsupported, and switches mounted in said actuators and operable upon movement of the actuators about their pivots in the direction of web travel to actuate said brake means.

In testimony whereof I have signed my name to the above specification.

GEORGE F. WIKLE.