

Jan. 8, 1952

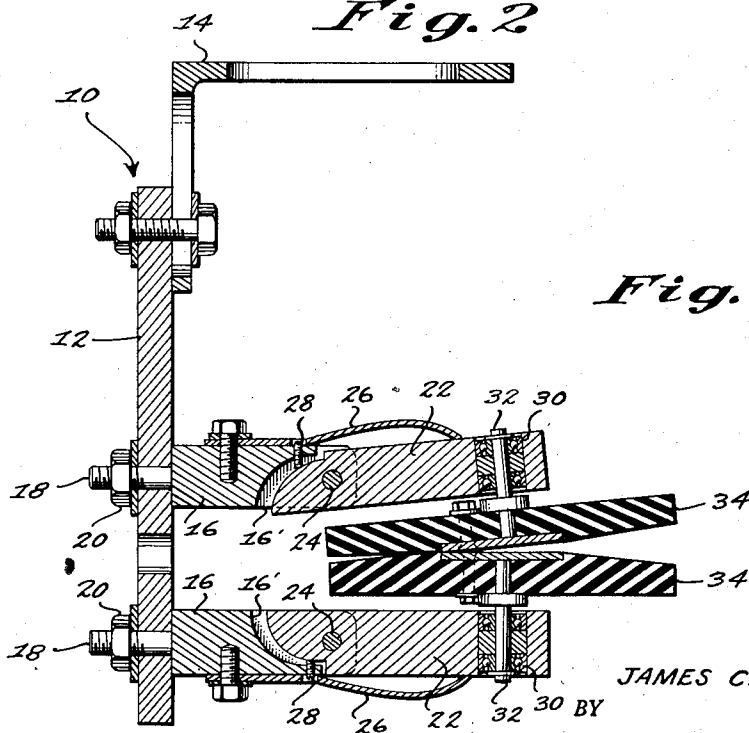
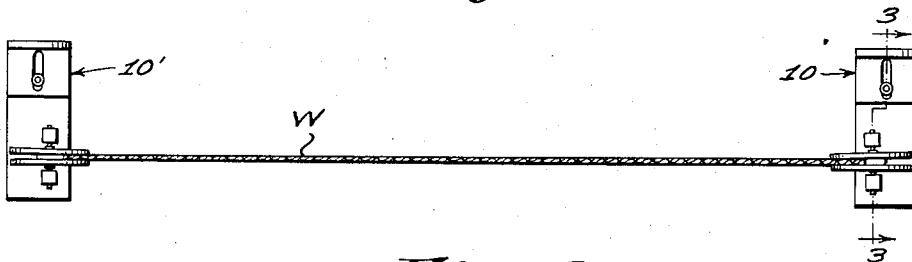
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2,581,821

SELVAGE OPENING MEANS

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2 SHEETS—SHEET 1



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2 SHEETS—SHEET 2

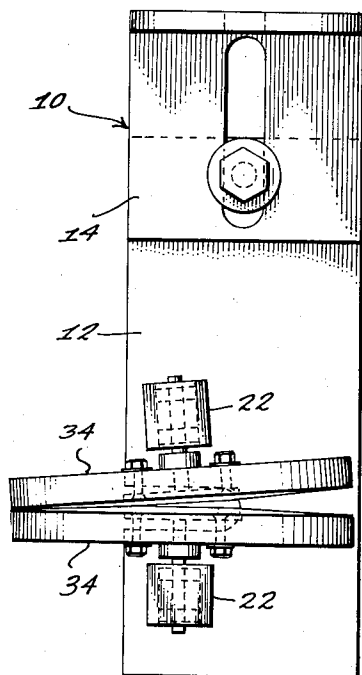


Fig. 4

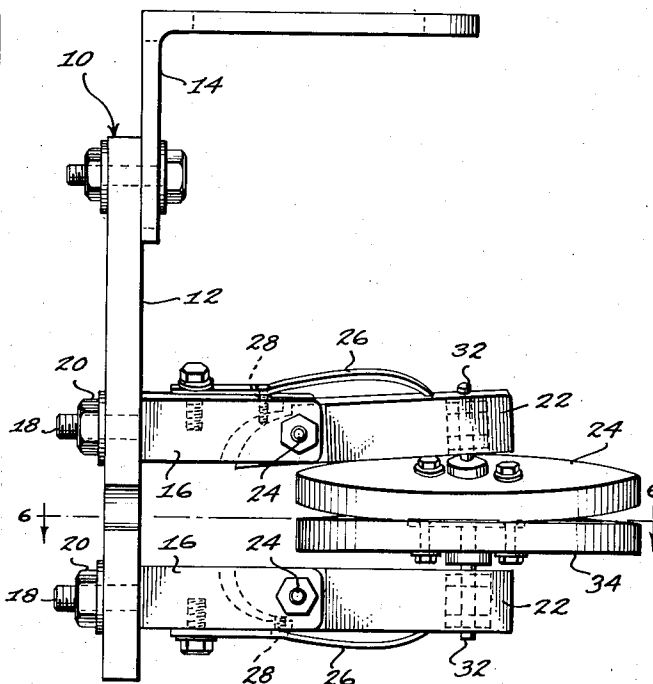


Fig. 5

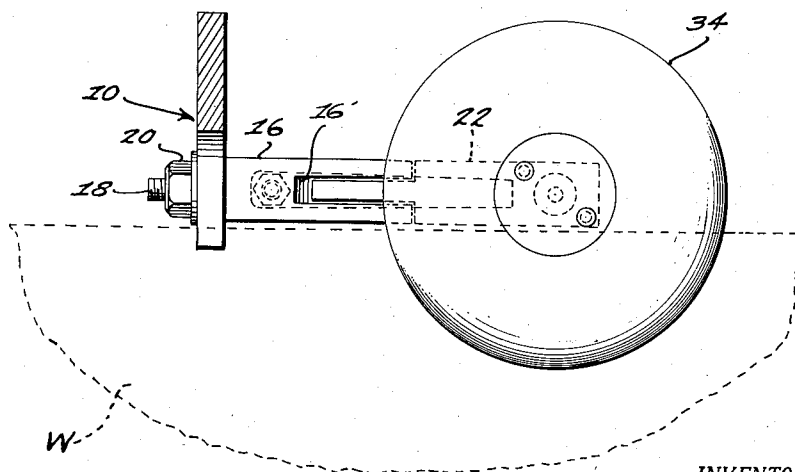


Fig. 6

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SELVAGE OPENING MEANS

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6 Claims. (Cl. 26—65)

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This invention relates to an improved means for opening the selvages, i. e., removing curl from the side edges, of a traveling fabric web, and further for maintaining the traveling fabric web transversely taut and smooth.

In handling a traveling fabric web through various processing operations, it is highly important in a number of instances to maintain the web open at its selvages and transversely taut and smooth. In a printing machine, for example, if the web being printed is allowed to curl at the selvages or is transversely slack as it approaches the printing station, the web is very easily creased as it passes through the printing rolls, so that an imperfect printing impression results. A similar situation exists in the soaping or washing equipment used after printing in which the web is run through squeeze rolls. If the web is allowed to be creased at all by these squeeze rolls, the printed color spreads badly and causes defective cloth. Likewise, when a fabric web is being run over the heated cylinders of a drying range, if any crease or fold occurs in the cloth a mark is left which cannot be removed.

The problem of eliminating folds or creases in these and other similar instances during the processing of a fabric web is provided for in a particularly advantageous manner by the selvage opening means of the present invention. Briefly described, this selvage opening means comprises pairs of rotatable and resilient disc elements arranged generally in face-to-face relation for receiving the selvages of a traveling fabric web between their faces adjacent a portion of their peripheries so that the discs are rotated by the traveling fabric web, and means for adjusting the disc elements of each pair in angular relation with respect to each other so that they exert an outward pulling and opening action at the selvages as they are rotated by the fabric web. This arrangement makes it unnecessary to provide any separate operating means for actuating the selvage opening means of the present invention, and the adjustable arrangement of the disc elements further renders this selvage opening means easily adaptable for use in a variety of situations in web processing equipment.

The present invention is described further below in connection with the accompanying drawings, in which:

Fig. 1 is a fragmentary plan view illustrating the arrangement of the selvage opening means of the present invention in relation to a traveling fabric web;

Fig. 2 is a corresponding sectional view taken substantially on the line 2—2 in Fig. 1;

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Fig. 3 is an enlarged sectional detail of one of the selvage opening means taken substantially on the line 3—3 in Fig. 2;

Fig. 4 is an enlarged elevation of the selvage opening means as seen from the right in Fig. 3;

Fig. 5 is a left side elevation corresponding to Fig. 4; and

Fig. 6 is a section detail taken on the line 6—6 in Fig. 5.

In Figs. 1 and 2 of the drawings, the traveling fabric web is indicated at W, and selvage opening means arranged according to the present invention are shown at 10 and 10'. The selvage opener 10' is exactly similar to the opener 10, except that it has a complementary arrangement for disposition at the opposite selvage of the traveling web W as shown in Figs. 1 and 2.

The arrangement of the selvage opener 10 is illustrated more in detail in Figs. 3 to 6, inclusive, and as shown comprises an assembly plate 12 fitted with a mounting bracket 14, and carrying two support arms 16 extending from the assembly plates 12 in parallel spaced relation. The support arms 16 are fitted with studs 18 that are received by the assembly plate 12 and held in place by nuts 20, so that the support arms 16 may be revolved on their longitudinal axis, i. e., the axis of the studs 18, when the nuts 20 are loosened, for adjustment with respect to the assembly plate 12.

The support arms 16 are slotted at their extending ends as indicated at 16' to receive the shank of extension arms 22 for assembly on a pivot pin as at 24 to form a knuckle joint. A leaf spring 26 is fixed on each support arm 16 to press the extension arms 22 yieldably in one direction, and the support arms 16 are further fitted with set screws 28 disposed to extend into the slot 16' and bear on the shank of extension arms 22 to provide adjustable stop means for adjusting the pivoted position of the extension arms 22 against the pressure of the leaf springs 26. The spaced support arms 16 and pivoted extension arms 22 are arranged on each assembly plate 12 with opposed dispositions, and with the leaf springs 26 pressing the extension arms toward each other as shown in Fig. 3.

The extension arms 22 are in turn fitted at their extending ends with bearing units 30 adapted for supporting stub shafts 32 which extend transversely from the extension arms 22 to carry the resilient disc elements 34. These disc elements 34 are formed of rubber or other comparable resilient material, and are arranged in the extension arms 22 so that they comprise a pair disposed generally in face-to-face relation

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with each disc 34 supported independently for rotation about its center in a separate extension arm 22. Also, the pivoted mounting of the extension arms 22 on the support arms 16, and the mounting arrangement on the assembly plate 12 which allows the support arms 16 to be revolved, renders the disc elements 34 universally adjustable so that the axis of rotation of each disc element 34 may be adjusted as desired in angular relation with respect to the other disc element 34 of each pair.

As a result the disc elements 34 of each pair may be angled so that they are arranged in contact with each other adjacent only a portion of their peripheries, and when the discs 34 are angled in this manner so that their contacting portions move outwardly in a direction generally transverse to the web W as they are rotated by the traveling web, an outward transverse pull is exerted on the web W. The resilient rubber disc elements 34 exert this outward pull in a particularly effective manner because they can be adjusted for good gripping action at the selvages of the web W, and also because they are well adapted for handling any curl or fold which may occur at the selvages. The arcuate direction of the pull exerted by the contacting portions of the discs 34 as they are rotated by the traveling web W has a natural tendency to open and smooth out any such curl or fold at the selvages, but the resilient nature of the disc elements 34 substantially improve this opening action. Also, the yielding pressure constantly exerted on the discs 34 from the leaf springs 26 further enhances the resilient gripping effect of the discs 34, and allows them to be adjusted nicely for handling all types and conditions of fabric web.

I claim:

1. Means of the character described for maintaining a traveling fabric web transversely taut and for removing curl from the selvages or side edges of said web, said means comprising pairs of resilient disc elements arranged with the discs of each pair disposed generally in face-to-face relation and with each disc supported independently for rotation about its center, means for adjusting the axis of rotation of each disc in angular relation with respect to the other disc of each pair whereby the discs of each pair may be arranged in contact adjacent only a portion of their periphery, and means for disposing a pair of said discs adjacent each side edge of said traveling web to receive the side edge portions of the web between said discs at their contacting portions.

2. Salvage opening means for removing curl from the selvage or side edges of a traveling fabric web and for maintaining said web transversely taut and smooth, comprising a pair of resilient disc elements arranged adjacent each selvage of said web, the discs of each pair being disposed generally in face-to-face relation with each disc supported independently for rotation about its center, and the supports for said discs being independently adjustable for adjusting the axis of rotation of each disc in angular relation with respect to the other disc of each pair, whereby the discs of each pair may be arranged in contact adjacent only a portion of their periphery, and whereby said angled pairs of discs will be rotated by said traveling web to exert an outward transverse pull on said web when disposed to receive the selvages of said web between their contacting portions.

3. Salvage edge opening means for removing curl from the selvage or side edges of a travel-

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ing fabric web and for maintaining said web transversely taut and smooth, comprising support means disposed adjacent each selvage of said traveling fabric web, a pair of resilient disc elements carried on said support means generally in face-to-face relation for receiving the selvages of said traveling web between their faces adjacent a portion of their periphery, said discs being mounted independently on said support means for rotation about their centers, and being universally adjustable on said support means for adjustment in angular relation with respect to each other, whereby the discs of each pair may be arranged in contact adjacent only a portion of their periphery, and whereby said angled pairs of discs will be rotated by the traveling web to exert an outward transverse pull on said web when disposed to receive the selvages of said web between their contacting portions.

4. A salvage opener for removing curl from the selvages of a traveling fabric web and for exerting an outward transverse pull on said web to maintain it taut and smooth, comprising a support means adapted for mounting adjacent a selvage of a traveling fabric web, arm members mounted to extend from said support means in parallel spaced relation, said arm members being adjustable about their longitudinal axes on said support means, extension arms pivoted at the extending ends of each of the said first mentioned arm members, yieldable means carried on said first mentioned arm members for pressing said extension arms toward each other, adjustable stop elements on said first mentioned arm members for resisting the pressure of said yieldable means and thereby limiting the pivoting movement of said extension arms, and a resilient disc element carried by each of said extension arms for rotation about its center and disposed generally in face-to-face relation with the disc element carried by the other of said extension arms.

5. Salvage opening means for removing curl from the selvage or side edges of a traveling fabric web and for maintaining said web transversely taut and smooth, comprising support means disposed adjacent each selvage of said traveling fabric web, a pair of arm members carried by each of said support means to extend in parallel spaced relation, said arm members being assembled on said support means for adjustment about their longitudinal axes, extension arms pivoted at the extending ends of said first mentioned arm members, a stub shaft mounted transversely for rotation in each of said extension arms, a resilient disc element mounted at its center on each of said stub shafts and disposed in generally face-to-face relation with the disc element carried by the other of said stub shafts, yieldable means mounted on said first mentioned arms for pressing said extension arms toward each other for maintaining said disc elements in face-to-face contact, and stop elements mounted on said first mentioned arms for resisting the pressure of said yieldable means and thereby limiting the pivoting movement of said extension arms.

6. Salvage opening means for removing curl from the selvage or side edges of a traveling fabric web and for maintaining said web transversely taut and smooth, comprising pairs of rotatable and resilient disc elements arranged generally in face-to-face relation for receiving the selvages of said traveling fabric web between their faces adjacent a portion of their peripheries so that the discs are rotated by said traveling

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web, and means for adjusting the resilient disc elements of each pair in such angular relation with respect to each other that they are arranged in contact adjacent only a portion of their peripheries and their contacting portions move outwardly in a direction generally transverse to said web when they are rotated by said web.

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The following references are of record in the file of this patent:

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