

Dec. 10, 1963

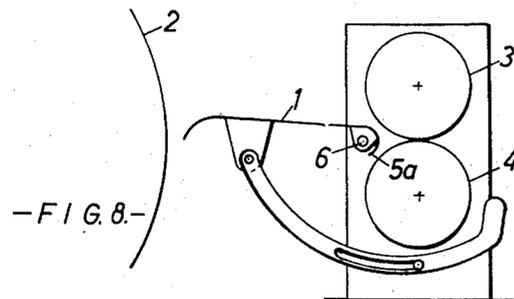
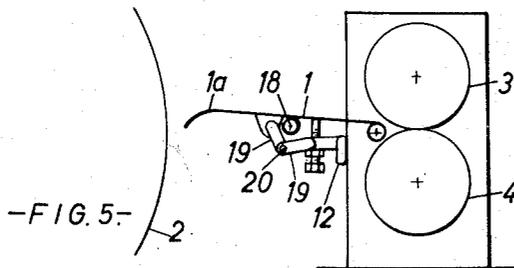
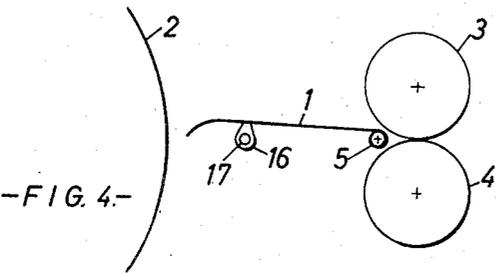
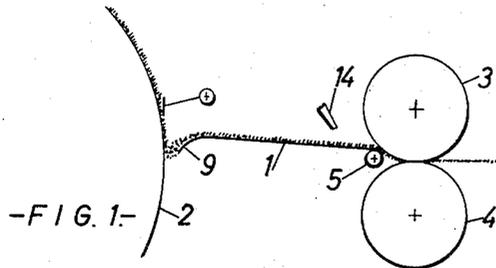
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3,113,348

APPARATUS FOR GUIDING TEXTILE WEBS

Filed Jan. 19, 1961

5 Sheets-Sheet 1



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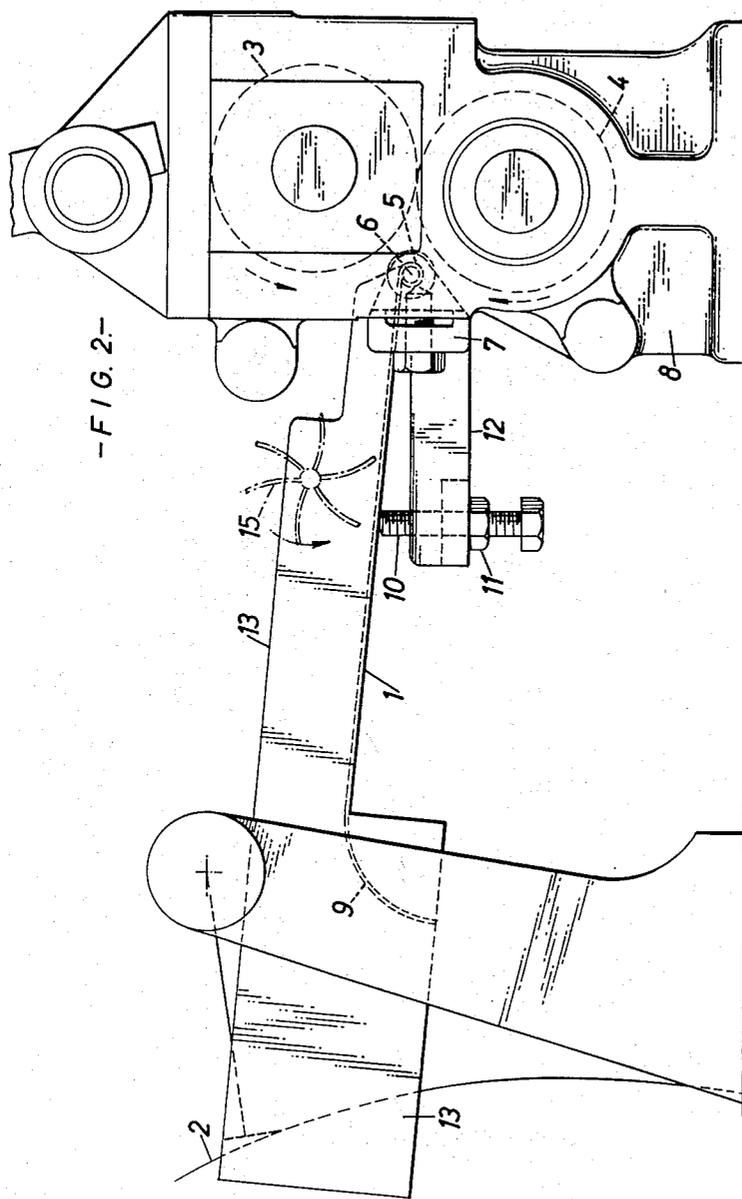
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APPARATUS FOR GUIDING TEXTILE WEBS

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-FIG. 2-

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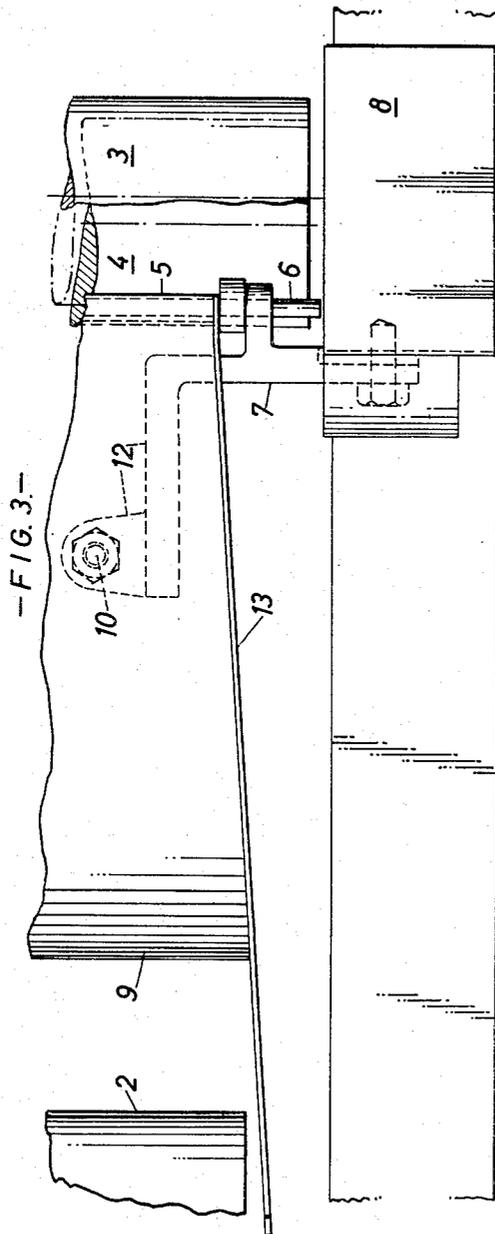
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APPARATUS FOR GUIDING TEXTILE WEBS

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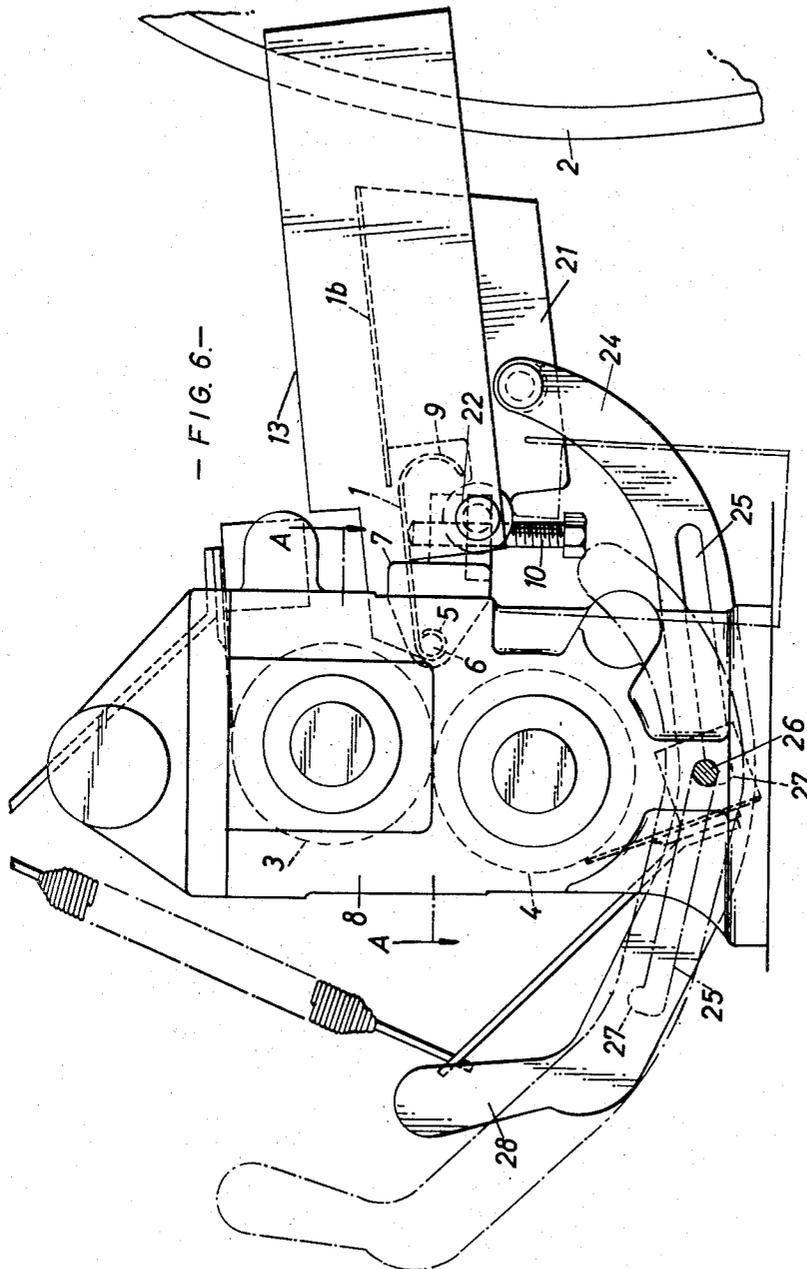
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APPARATUS FOR GUIDING TEXTILE WEBS

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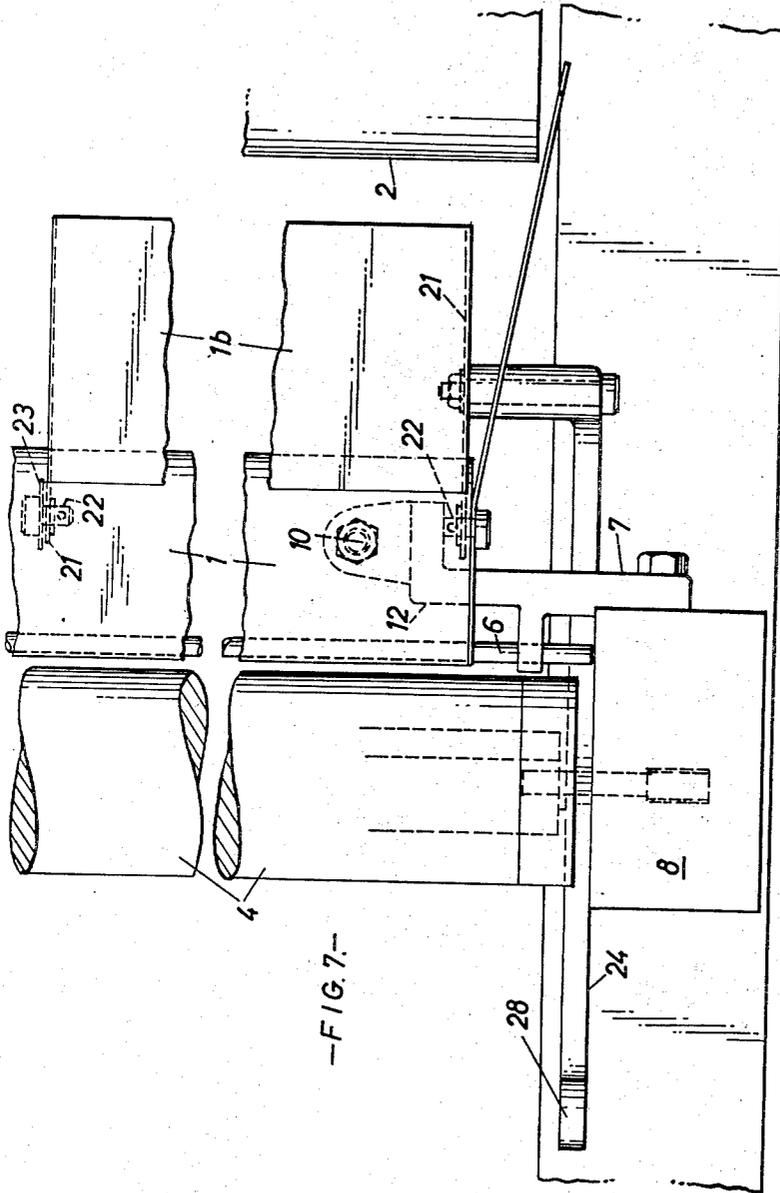
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APPARATUS FOR GUIDING TEXTILE WEBS

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-FIG. 7.-

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3,113,348

**APPARATUS FOR GUIDING TEXTILE WEBS**

Andre Varga, Toronto, Ontario, Canada, assignor to Carding Specialists (Canada) Limited, Toronto, Ontario, Canada, a corporation of Canada

Filed Jan. 19, 1961, Ser. No. 83,806

Claims priority, application Great Britain Feb. 5, 1960  
3 Claims. (Cl. 19-106)

This invention relates particularly to the guiding of textile webs when passing from carding machinery to processing rollers, such as pressure applying rollers.

Webs of fibres are more commonly removed from the doffer roller of a carding machine by means of a flycomb and then passed between a pair of co-acting rollers which are often employed for ironing the fibres and/or crushing seeds or other impurities. When first starting the web across the gap between the doffer roller and co-acting rollers it is common practice for an operator to feed the web in by hand to the nip of the rollers. As it is considered that this can be a danger to the operator because his fingers may be caught, it is desirable that some guard and/or guide means be furnished to prevent injury to an operator and it is the main object of the present invention to solve this problem.

The term "co-acting rollers" as used generally hereafter is intended to include rollers to one or both of which positive pressure is applied, or where one roller of a pair rests upon the other roller, or where a roller is set to be in rolling contact with or spaced from the other roller.

According to the present invention there is provided apparatus for guiding and supporting textile webs between a doffer roller and a pair of co-acting rollers, including a web supporting bridge plate mounted between the doffer roller and the co-acting rollers for an uncondensed web to pass thereover, said plate having its rear edge so positioned relative the pair of co-acting rollers as to facilitate the initial feeding in of the web between the rollers and to prevent a person's hand being inadvertently drawn into the nip of the rollers.

The bridge plate may have its rear edge located in a slightly higher plane than the contact line of the co-acting rollers and substantially closely adjacent the periphery of the upper roller without hindering the movement of a web.

The bridge plate may have its front part curved or inclined downwardly and adapted so that when positioned there will be a gap between the plate front edge and the doffer roller. The bridge plate may be mounted inclined slightly downwardly towards its rear edge and mounted adjustably at least for initial setting. At least part of the bridge plate or an associated part may be displaceable.

The invention will now be particularly described with reference to the accompanying drawings, in which:

FIG. 1 is a diagrammatic side view illustrating one form of bridge plate mounted in relation to a doffer roller and a pair of co-acting rollers;

FIG. 2 is a side elevation of a practical form of such a bridge plate;

FIG. 3 is a part plan view of FIG. 2;

FIG. 4 is a diagrammatic side view of a hinged bridge plate with means for moving the plate when supporting a web;

FIG. 5 is a diagrammatic side view showing a two-part bridge plate;

FIG. 6 is a side elevation of another type of two-part bridge plate;

FIG. 7 is a part plan view of FIG. 6 on line A—A; and

FIG. 8 is a diagrammatic side view of a bridge plate hinged about one end for displacement purposes.

In particular embodiment of this invention a bridge

plate 1 is formed of a width to suit a carding doffer roller 2 and set of associated pressure rollers 3, 4 and of a length to suit the gap between such doffer roller and pressure rollers. The rear edge 5 of the plate 1 is carried by mounting means and is shown bent around a cross rod 6 (or other round section member) which has its ends projecting for mounting in side brackets 7. These brackets are mounted on the framework 8 of the pressure roller machine assembly and disposed wholly below the bridge plate 1. The forward part 9 of the bridge plate is preferably curved, or inclined, downwardly for a given distance and when the plate is positioned the front edge of this part is spaced a pre-determined distance from the periphery of the doffer roller 2. Moreover, with the bridge plate 1 in situ the rear edge 5 of the plate is preferably, but not necessarily, located in a plane slightly above the plane of the nip of the pressure rollers 3, 4 and with such rear edge substantially close to the periphery of the upper roller 3 which will be rotating so that a web delivered from the bridge plate will be carried downwardly a short distance to the nip of the rollers. Moreover, the bridge plate is inclined slightly downwardly from front to rear to facilitate the feeding of the web thereover and moreover the surface of the plate is preferably polished or finished with a substantially frictionless surface. If so desired, the plate may be in effect hingeable about its rear edge, e.g. the axis of the rod 6, and furnished with adjustable stay means. In FIGS. 2 and 3 an adjusting screw 10 with a lock nut 11 is passed up through the part 12 of the bracket 7 which lies beneath the plate 1. A screw 10 is provided at each side of the plate. The adjusting screws will at least allow the bridge plate to be initially set in a desired plane, i.e. either horizontal or with a desired inclination. The numeral 14 is a blower nozzle.

A bridge plate constructed and located as described facilitates the initial guiding and supporting of webs over the gap between doffering and pressure rollers as it has been found that at the very most only a slight hand movement on the part of an operator is required to start the web between the pressure rollers. Moreover, by the provision of a curved or inclined front part to the plate and a gap between it and the doffer roller the accumulation of "trash" and "fly" is eliminated or at least minimised and should any "trash" be accumulated, it tends to fall away between the bridge plate and doffer roller. Furthermore, the positioning of the rear edge of the bridge plate is such that it acts as a guard against the possibility of an operator being injured by having a hand drawn into the nip of the pressure rollers.

To facilitate the guidance of the normally irregular edge of a web, side cheek plates 13 project above the surface of the bridge plate and these are flared outwardly towards the front edge so as to constrain any tendency of the web to rub against protruding frame parts. The cheek plates may be integral with, joined to, or associated with the bridge plate.

In the latter case the cheek plates may be independently mounted or carried by the bridge plate or its mounting.

Although an operator could directly by hand, or by use of say a stick, assist the web initially to move into the nip of the pressure rollers, if desired means may be furnished for this operation. For example, one or more air jets (FIG. 1) may be furnished to blow the fibre web towards the pressure rollers or a rotary or other device be furnished, say in the fashion of a skeleton paddle wheel 15 (FIG. 2). Alternatively, the bridge plate may be mounted to have a limited hinging movement about its rear edge 5 so that the plate can be "flapped" up and down to assist the initial travel of a web thereover to the pressure rollers. For example, as illustrated in FIG. 4 one or more cams 16 may be mounted beneath the plate 1 to support it (the cam shaft 17 may be adjustably

mounted for setting the plate) and when rotated cause the plate to rise and fall.

A further modified construction is shown in FIG. 5 wherein the bridge plate is in two parts 1 and 1a associated at 18. The part 1a may be hinged, or located adjacent, to and be supported in its operative position in any convenient manner. For example, a pair of levers 19 may be hinged to the plate and bracket part 12 respectively and have a lockable common pivot 20 which will allow adjustment of the plate 1a and when released let the said plate swing down out of the way of a web. This type of construction is illustrated in a modified form in FIGS. 6 and 7. A short plate 1 with long cheek plates 13 is mounted as previously described for FIGS. 2 and 3 and an extension plate 1b is hingeably attached thereto. Said plate 1b extends only part way across the width of plate 1 (it may extend the whole width) and is provided with downturned side flanges 21 for mounting it on the pivot pins 22 carried by one cheek plate 13 (both when a full width plate 1b is used) and a lug 23. The plate 1b is supported by a lever 24 pivotally anchored thereto and having a slot 25 for receiving a mounting pin 26. The slot end has a lever retaining notch 27 and the lever end forms a gripping handle 28. Thus the plate 1b can readily be swung into and out of its operative position. Alternatively, a complete bridge plate 1 may be mounted to be moveable down from a web supporting position as indicated in FIG. 8. By curving the plate at 5a to a radius struck from the pivot 6 it will still give support to a web adjacent the nip of the rollers 3, 4 and form a guard for the operator.

It is considered that if a bridge plate or an associated part is mounted to be capable of swinging down, should there be any tendency for "trash" to accumulate at the front end of the plate it can be disposed of by dropping the plate or part. The plate or part can be left down or moved back to a web supporting position.

I claim:

1. In a carding machine, a doffer roller, means for doffing a filmy web of fibres from said doffer roller, a pair of superposed pressure rollers arranged axially parallel with said doffer roller and spaced a short distance carry the web from the former to the latter, said plate between said doffer roller and said pressure rollers to carry the web from the former to the latter, said plate having its front edge spaced from the periphery of the doffer roller to leave a substantial gap for deleterious matter to fall away from a web, said plate having a rear delivery edge curved downwardly and located closely adjacent to the periphery of the upper of said pressure rollers for a web to be drawn automatically off the plate by the pressure rollers.

2. In a carding machine as defined in claim 1, wherein the bridge plate has its rear edge curved in a substantially small radius about a pivotal axis, and screw means for adjusting the plate about said axis for setting it in its operative position.

3. In a carding machine as defined in claim 1, wherein the bridge plate has upstanding side cheek plates, said cheek plates extending beyond the front edge of the bridge plate and flaring outwardly to and partly on each side of the doffer roller so as to facilitate side guiding of the web from the doffer roller to and over the bridge plate.

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UNITED STATES PATENT OFFICE  
CERTIFICATE OF CORRECTION

Patent No. 3,113,348

December 10, 1963

Andre Varga

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 4, line 6, for "carry the web from the former to the latter, said plate" read -- therefrom, a bridge plate, means for mounting said plate --.

Signed and sealed this 5th day of May 1964.

(SEAL)

Attest:

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Attesting Officer

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