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STRIP GUIDER

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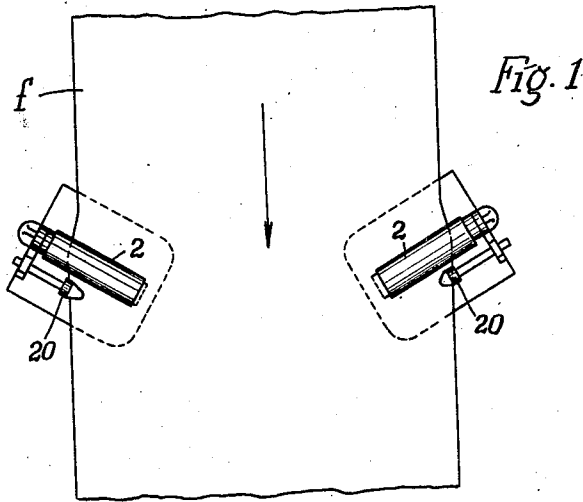


Fig. 1

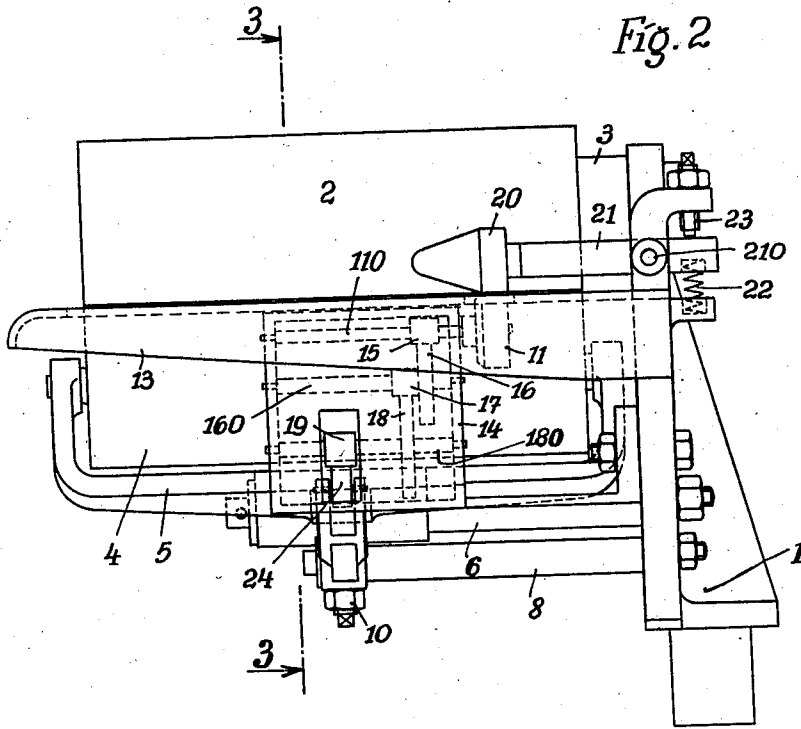


Fig. 2

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STRIP GUIDER

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5 Claims. (Cl. 26—66)

My invention relates to improvements in strip guiders, and more particularly in mechanically operated guiders for guiding fabrics for example to a wind-up roll, so that the same will be properly wound up thereon. The object of the improvements is to provide a guider of this type which is immediately responsive to any change in the proper movement of the fabric, and which permits a rapid movement of the fabric. With this object in view my invention consists in constructing the apparatus controlling the operation of the guiding members in the form of a rotary member adapted to be engaged by the edge of the fabric which deviates from its normal path, the said rotary member being connected with the guiding members and with a power storing device adapted to return the said guiding members into initial position. In order to reduce the resistance of the said rotary member and to permit the power storing member rapidly to return the same and the guiding members into initial position after the fabric has been brought to the normal path, the said rotary member and associated parts are small in size and mass, so that little power is needed for returning the same into initial position.

For the purpose of explaining the invention an example embodying the same has been shown in the accompanying drawings in which the same reference characters have been used in all the views to indicate corresponding parts. In said drawings.

Fig. 1 is a diagrammatical plan view showing a pair of guiders acting on the edges of a fabric,

Fig. 2 is an elevation showing the apparatus,

Fig. 3 is a sectional elevation taken on the line 3—3 of Fig. 2, and

Fig. 4 is a top plan view of Fig. 3.

Referring to the example illustrated in the drawings and more particularly in Fig. 1, one guider is provided at each side of the fabric *f*, and each guider comprises an upper roller 2 mounted in a stationary bearing, and a lower roller 4 cooperating therewith and bodily movable relatively thereto, the said guiders being disposed angularly of the edge of the fabric, as is known in the art. In front of each guider a feeler is provided which controls the relative position of the rollers 2 and 4, and which comprises a milled roller 11 adapted to be engaged by the edge of the fabric which deviates from its correct path, the fabric being adapted to be pressed on the roller 11 by means of a roller 20.

As appears from Figs. 2 to 4, the guider is mounted on a stand or base 1 which may be

affixed to a table or other suitable support. On a shaft 3 fixed to the said stand the roller 2 is rotatably mounted, and on a pivot bolt 6 a lever or bail 5 is rockingly mounted which provides a bearing for the roller 4 and permits the said roller to be bodily moved towards and away from the roller 2. Below the lever 5 a bolt 8 is secured to the stand 1, and on the said bolt a lever 7 is rockingly mounted which is acted upon by a power storing member in the form of a spring 9 tending to rock the same upwardly and towards the lever 5. In an internally screw-threaded bore of the said lever a screw bolt 10 is adjustably mounted on which the lever 5 is supported, so that the spring 9 tends to press the roller 4 into engagement with the roller 2 or a fabric placed between the said rollers.

The roller 20 is rotatably mounted on a lever 21 which is rockingly mounted on a pivot bolt 210 secured to the stand 1, and which is acted upon by a spring 22 tending to rock the same and to press the roller 20 towards the edge of the fabric, a micrometer-screw 23 being provided for setting the lever 21 and the roller 20 in the proper position relatively to the surface of the fabric and the milled roller 11. The roller 11 is connected by pairs of gear wheels 15, 16, 17 and 18 with an arm 19, the gear wheel 15 being fixed to the arbor 110 of the roller 11, the gear wheels 16 and 17 being fixed to an arbor 160 and the gear wheel 18 and arm 19 being fixed to an arbor 180. All the said arbors, gear wheels and arm are mounted in a casing 14 secured to the stand 1. The arm 19 acts on the lever 7 through the intermediary of a roller 24 mounted on an arm 70 secured to or made integral with the lever 7. By means of the micrometer-screw 23 the lever 21 and the roller 20 are set in such positions that normally the rollers 20 and 11 are out of contact with each other, and so that pressure is exerted by the roller 20 on the fabric and the roller 11 when the edge of the fabric passes between the same. Thus, when the fabric deviates and its edge gets between the rollers 20 and 11, the milled roller 11 is rotated, and such rotary movement is transmitted through the intermediary of the gear wheels 15, 16, 17 and 18 to the arm 19, which acts on the roller 24 and presses the lever 7 downwardly in opposition to the spring 9. Thus the pressure of the rollers 2 and 4 on the fabric is reduced, and the guider provided at the opposite edge of the fabric is enabled to pull the fabric into the correct position, as is known in the art. By the downward movement of the lever 7 power is stored in the spring 9, and when the

edge of the fabric has been brought into correct position and the roller 11 is relieved of the pressure of the roller 20 the spring 9 pulls the lever 7 upwardly and with the roller 4 into engagement with the fabric. By the upward movement of the lever 7 the train of gear wheels 15, 16, 17, 18 is slightly rotated rearwardly, and the resistance opposed to the movement of the lever 7 by the said gear wheels is exceedingly small, because the gear wheels and the roller 11 are small in size, and because the roller 11 is out of engagement with the fabric and the roller 20. During the return movement of the lever 7 no rotary movement is transmitted to the roller 20, which has been set by the screw 23 into position slightly away from the roller 11. Therefore the mass and the inertia of the moving bodies and therefore the resistance opposed to the movement of the lever 7 are very small so that the mechanism immediately responds to the action of the edge of the fabric thereon.

By means of the micrometer-screw 23 the roller 20 may be placed exceedingly close to the roller 11 and out of frictional engagement therewith. Therefore even very thin fabrics are adapted to exert high tension, and the spring 9 may be made so strong that the rollers 2 and 4 are pressed together with high force, and the roller 11 is rotated by the spring immediately after it has left the edge of the fabric.

I claim:

1. In a guider for fabrics, the combination with a pair of guider rollers controlling the movement of the fabric, of a feeler device comprising a power storing member adapted to press said rollers into engagement with the fabric moving between the same, a feeling member mounted for rotation of more than one revolution and having a fixed location and adapted to be engaged by the face of the fabric being deviated adjacent the edge thereof, and a connection between said feeling member and power storing member adapted during several revolutions of the feeling member to store power in said power storing member and to reduce the pressure exerted thereby on said rollers, the size and mass of said feeling member being so small that the resistance opposed thereby to the action of the power storing member is reduced to a minimum.

2. In a guider for fabrics, the combination with a pair of guider rollers controlling the movement of the fabric, of a feeler device comprising a power storing member adapted to press said rollers into engagement with the fabric moving between the same, a feeler roller adapted to be engaged by the edge of the fabric being deviated, a counter roller cooperating with said feeler roller and adapted to press the edge of the fabric being deviated into frictional engagement therewith, means for setting said counter roller into the position in which it is out of frictional engagement with said feeler roller

and adapted to press the edge of the fabric into frictional engagement therewith, and an operative connection between said feeler roller and power storing member adapted to store power in said power storing member and to reduce the pressure exerted thereby on said guider rollers, the size and mass of said feeler roller being so small that the resistance opposed thereby to the action of the power storing member is reduced to a minimum.

3. In a guider for fabrics, the combination with a pair of guider rollers controlling the movement of the fabric, of a feeler device comprising a power storing member adapted to press said rollers into engagement with the fabric moving between the same, a feeler roller adapted to be engaged by the edge of the fabric being deviated, a counter roller cooperating with said feeler roller, resilient means tending to move said counter roller towards said feeler roller, means for limiting the movement of said counter roller towards the feeler roller in position slightly out of frictional engagement therewith, and an operative connection between said feeler roller and power storing member adapted to store power in said power storing member and to reduce the pressure exerted thereby on said guider rollers, the size and mass of said feeler roller being so small that the resistance opposed thereby to the action of the power storing member is reduced to a minimum.

4. In a guider for fabrics, the combination with a pair of guider rollers controlling the movement of the fabric, a bearing for one of said rollers permitting bodily movement thereof, and a power storing member acting on said bearing and tending to press the same with said rollers towards each other, of a feeler body comprising a rotary member adapted for engagement with the edge of the fabric being deviated, and an operative connection between said rotary member and bearing comprising a train of gear wheels and an arm acting on said bearing, said operative connection being constructed for retracting said bearing with the rollers away from each other.

5. In a guider for fabrics, the combination with a pair of guider rollers each extending beyond the edge of the fabric in any position assumed thereby and controlling the movement thereof, of a feeler device comprising a power storing member adapted to press said rollers into engagement with the fabric moving between the same, a feeling member rotatable only about a fixed axis adapted to be engaged by the face of the fabric being deviated adjacent the edge thereof and beyond the guider rollers, and an operative connection between said feeling member and power storing member adapted to store power in said power storing member and to reduce the pressure exerted thereby on said rollers.

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