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CLOTH SPLITTING ATTACHMENT FOR LOOMS

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Fig. 1.

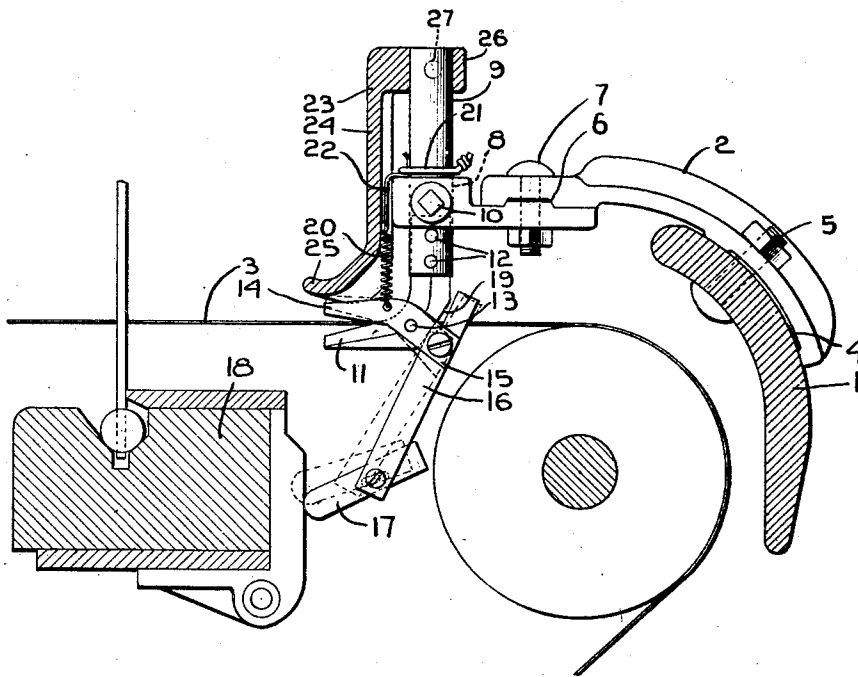
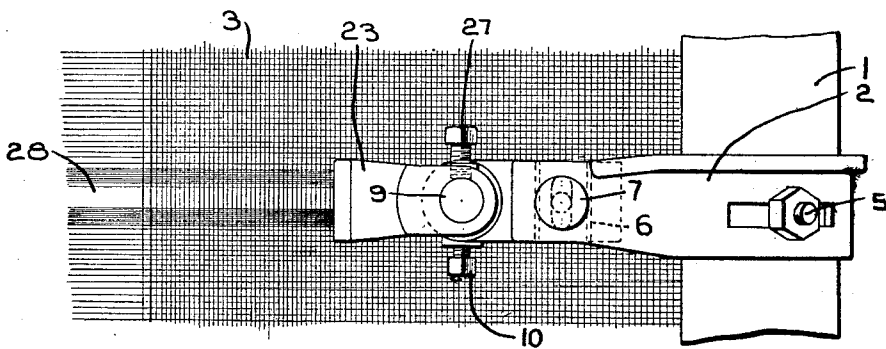


Fig. 2.



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CLOTH SPLITTING ATTACHMENT FOR LOOMS

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This invention relates to an attachment for looms adapted to cut or split the cloth into a plurality of strips during the weaving operation. Devices of this character are adapted to a variety of uses as for instance in the production of narrow goods in which case it is found economical to weave a wide sheet and employ one or more splitting attachments to divide it into a plurality of strips of the required width. Such devices are found especially useful where an intermediate or center selvege is woven into the fabric in which case the attachment cuts through the center of the longitudinal section constituting the center or intermediate selvege.

The object of the invention is to provide an attachment of this character which will split the cloth positively and evenly.

A further object of the invention is to provide such an attachment which will prevent distortion of and undue strain on the cloth at the cutting point.

A further object of the invention is to provide an attachment having a driven cutting mechanism.

The object of the invention is further to provide a cloth splitting attachment having a driven cutter in which the moving parts are covered to protect the operator.

These and other objects and features of the invention will appear more fully from the accompanying description in connection with the drawings and will be particularly pointed out in the claims.

The drawings illustrate only a portion of the loom directly associated with the device and show the manner of mounting and details of a preferred embodiment thereof.

Fig. 1 is a cross sectional view through the front portion of a loom showing the attachment in place and a portion of the associated elements of the loom.

Fig. 2 is a plan view of the device showing the method of attachment to the loom.

The device is positioned at a point forward of the fell and near the sand roll. A convenient point from which to support the attachment is the breast beam 1. Such support is accomplished by means of the ad-

justable bracket 2. Any number of the devices may be attached to the breast beam dependent upon the required number of divisions to be made in the cloth 3. Only one however is illustrated in the drawings and is secured to the breast beam by the bracket 2 which may conveniently be made to conform to the curved surface 4 of the breast beam and is secured thereto by means of the bolt 5. It is to be understood however that the specific method of attachment forms no part of the invention and other methods may be employed without departing therefrom.

The bracket 2 is constructed in two sections having a laterally adjustable coupling 6 by means of which the cutter mechanism may be shifted a limited amount laterally of the cloth accurately to fix the correct cutting position. The coupling 6 is rigidly secured by the bolt 7. The free end of the bracket 2 has a vertically disposed aperture 8 therein to receive a cylindrical post 9 which is held within the aperture by means of the set screw 10. In the lower end of the post 9 is mounted a stationary cutter or shear blade 11. This blade may be secured to the post in any convenient manner and, as herein shown, a slot is provided in the post to receive the blade and rivets 12 are provided which pass through the post and the blade thus securely mounting it in place.

A movable shear blade 14 is pivoted at 13 upon the fixed shear blade 11 to form therewith a shear of the scissors type. The blade 14 has an extension 15 to which is secured an actuating arm 16 having at its free end an adjustable contact member 17 which extends into the path of the lay 18. The blades 11 and 14 are desirably made of suitable flat sheet material. The actuating arm 16 is secured to the same face of the movable blade 14 as that which engages the fixed blade 11 and in such position that the rear edge thereof will engage a flat edge face 19 of the fixed blade 11 forming a stop for the shear in its open position. The movable blade 14 is held in its open position by means of a spring 20 secured at one end to the blade and at its other end to any convenient stationary point on the device. As herein shown a loop of wire

21 is passed around the post 9 above the bracket 2 and embraces an extension 22 of the spring which is bent over the upper face of the bracket 2 and then passes beneath the wire loop 21 thus firmly anchoring the end of the spring to the post.

In order to protect the operator, a guard member 23 is provided which has a vertical portion 24 and a toe portion 25 which overlies the shear blades and particularly the moving blade. A supporting boss 26 at the upper end of the vertical portion of the bar 23 is bored to fit the post 9 and provided with a set screw 27 by means of which it is held in properly adjusted position.

As previously pointed out the device may be used to split a given piece of cloth into a plurality of widths without forming a center selvage. It is desirable, however, to weave the cloth with a center or intermediate selvage. As illustrated a typical adaptation of the device the drawings show cloth in which a special arrangement of warps is provided which causes a dense selvage weave on either side of a section 28 in which the warps are omitted. The shear mechanism is adjusted to a central point in the section 28 by means of the coupling 6 in the bracket 2 after which the coupling is secured by the bolts 7. The shear is then adjusted vertically by loosening the set screw 10 which permits the post 9 to be raised or lowered until the line of cut of the shear coincides with the plane of the cloth. The set screw 10 is then tightened after making sure that the shear blades are parallel with the warp threads. When the device is thus properly adjusted the effective portion of the fixed shear blade 11 will lie below the cloth while that of the movable blade 14 will lie above the cloth.

The movable blade preferably receives its cutting movement from the lay. The contact member 17 is adjusted to such position as to be struck by the lay at a point near the forward limit of its stroke. The motion imparted to the actuating arm may be slight, a quarter of an inch being sufficient for most materials. It may be found where heavy material is being woven that more movement may be desirable, in which case the contact member 17 may be adjusted to receive more movement from the lay.

It will be noted that the positive motion transmitted by the lay 18 gives the shear its cutting stroke while the spring 20 returns the blade 14 to its initial or open position determined by the stop. Such arrangement insures that the device will split the cloth positively and immediately upon its entering the cutting field of the shear. Furthermore, there is no tendency for the blades to distort the cloth or any of the strands of yarn at the cutting point since the power required to sever the material is obtained from the lay

and is not derived from the forward motion of the cloth contacting with the cutter blades.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is:

1. A cloth splitting attachment for looms comprising a shear of the scissors type, means to support said shear without distorting the cloth and with its cutting plane normal to the plane of the cloth and parallel with the warps and between the edges of the cloth, and means to actuate the shear from the lay to split the cloth longitudinally as it moves forward during the weaving operation.

2. A cloth splitting attachment for looms comprising a shear of the scissors type, vertically and laterally adjustable means to support said shear in a plane normal to the plane of the cloth and parallel with the warps and between the edges of the cloth, and means to actuate the shear from the lay to split the cloth longitudinally as it moves forward during the weaving operation.

3. A cloth splitting attachment for looms comprising a fixed shear blade, means to support said shear blade with its cutting edge in a plane normal to that of the cloth and parallel to the warps and between the edges of the cloth, a movable shear blade pivoted upon said fixed blade and in shearing relation therewith, and means operable by the lay to actuate the movable blade to split the cloth longitudinally as it moves forward during the weaving operation.

4. A cloth splitting attachment for looms comprising a fixed shear blade, adjustable means to support said blade from the loom frame with its cutting edge between the edges of the cloth and parallel to the warps and crossing the plane of the cloth and at its rear end below the plane of the cloth, a movable shear blade pivoted to and in shearing relation with said fixed blade and opening above the cloth, and an arm fixed to said movable blade extending into the path of the lay to receive motion therefrom, whereby the movable shear blade is rotated about its pivot to cause the shear blades to split the cloth longitudinally as it moves forward during the weaving operation.

5. A cloth splitting attachment for looms comprising a shear of the scissors type, adjustable means to support said shear without distorting the cloth and between the edges of the cloth in a plane normal to the plane of the cloth to cut parallel with the warps, means to actuate the shear one way from the lay, and automatic means to actuate the shear the other way thereby to sever the cloth as it moves forward during the weaving operation.

6. A cloth splitting attachment for looms comprising a fixed shear blade, means adjustable transversely of the loom to support said blade from the breast beam of the loom with its cutting edge between the edges of the cloth

and parallel to the warps, a movable shear
blade pivoted to and in shearing relation with
said fixed blade and opening above the cloth
and an arm adjustably secured to said mov-
5 able blade extending downward therefrom
into the path of the lay to receive motion
therefrom to actuate the shear, said arm
being adjustable forward and rearward
to vary the stroke of the shear independently
10 of the transverse adjustment of the shear and
its support.

In testimony whereof, I have signed my
name to this specification.

15 FREDERICK K. BROWN.