April 13, 1926. 1,580,270

S. WILLIAMS

FRICTION LET-OFF FOR LOOMS

Filed July 30, 1924

Fig. 1.

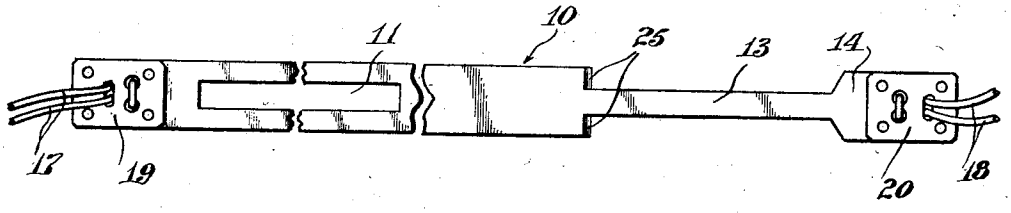
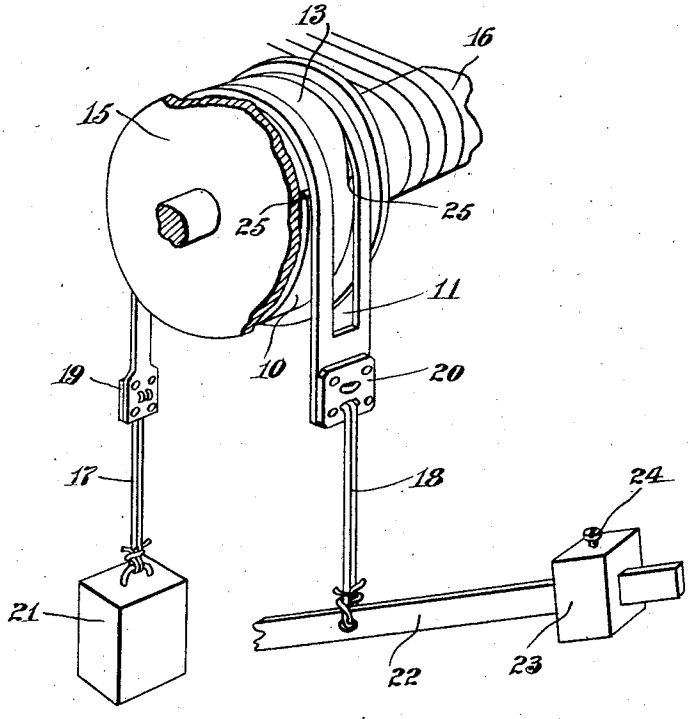


Fig. 2.



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FRICTION LET-OFF FOR LOOMS.

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To all whom it may concern:

Be it known that I, STANLEY WILLIAMS, a citizen of the United States, residing at Scranton, in the county of Lackawanna, State of Pennsylvania, have invented certain new and useful Improvements in Friction Let-Offs for Looms, of which the following is a specification.

This invention relates to let-offs for looms and more particularly to a device to coact with a friction drum or pulley connected with a warp beam to tension the warp threads as they are drawn from the warp beam in the weaving operation.

Some of the objects of the invention are to provide a friction let-off device effective in operation, simple in structure and economical to manufacture; to provide a friction band which will exert a uniform tension and thereby tend to produce uniformity in the fabric woven; and to provide a friction member which, when placed around a friction drum or pulley, will engage the pulley in a substantially uniform manner completely around the periphery of the pulley.

According to a preferred form of the invention the friction band or strap is made of suitable material, such as leather, and is slotted longitudinally and centrally at one end to receive a narrow portion formed near the other end by cutting away the edges. It will be seen that, when the strap is passed around the friction pulley and the narrow portion at one end passed through the slot at the other end, the narrow central portion at one end of the strap will act with the portions of the strap at the sides of the slot to engage the pulley completely across the zone engaged by the wide portion of the strap and thereby cause a uniform tension to be exerted on the warp threads irrespective of the angular position of the warp beam about its axis.

Other features and advantages will hereinafter appear.

In the drawings:

Fig. 1 is a view of the band or strap separate from the loom; and

Fig. 2 is a perspective view showing the brake or friction band applied to a friction pulley, the flange at one end of the pulley being broken away to show the arrangement of the friction band on the pulley.

In the preferred form of the invention a band or strap 10 of suitable material, such as leather, is formed toward one end with a central longitudinal slot 11, and toward the other end with a narrow central portion 13 of substantially the width of the slot. At the outer end of the narrow portion 13 is an end 14 which is of the full width of the strap, but the strap may be placed on a friction drum or pulley 15 connected with a warp beam 16 and by slightly twisting the strap the end 14 may be passed through the slot 11 and the narrow portion 13 brought into position in the slot 11, as illustrated in Fig. 2. It should be noted that support for the beam 16 is obtained by means of stub shafts such as 16^a (Fig. 2) extending from the warp beam 16 and beyond the drum or pulley 15 a sufficient distance for engagement with a bearing (not shown) on the loom frame.

To tension the strap 10 on the pulley 15, use is made of two cords 17 and 18 looped through openings in the strap and in reinforcing plates 19 and 20 respectively secured to the strap 10 at opposite ends thereof and extending in the same general direction, that is downward. The plates 19 and 20 are of suitable material, such as metal, and may be riveted to the strap. The cord 17 is attached at its lower end to a weight 21 which normally rests on the floor and the cord 18 is attached to a lever 22 fulcrumed on a pivot not shown, the tension of the strap being determined by a weight 23 which may be secured to lever 22 at any desired point by suitable means, such as a screw 24. As shown in Figs. 1 and 2, the shoulders 25 at the inner end of the narrow portion 13 are beveled to permit the narrow strips at the sides of the slot 11 to fit more closely around the pulley 15.

Although in the form shown for the purpose of illustration the slot in the strap is closed at its outer end and there is a broad portion at other end of the strap it should be understood that the scope of my invention is broad enough to include a strap in which one or both ends of the strap are omitted and suitable means provided to connect the ends of the narrow portions of the strap with strap-tensioning devices such as the weight 21 and lever 22. Furthermore the single central narrow portion at one end might be replaced by two or more separate narrow portions or strips suitably spaced apart, the strap being provided at its opposite end with narrow portions or strips arranged to enter the slots between the narrow

strips at the other end of the strap. The narrow strips at the opposite ends of the strap may then be attached by suitable means to cords such as 17 and 18.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described my invention, I claim:

The combination with a warp beam having stub shafts projecting from its ends for detachably mounting the same in a loom frame, of friction let-off means therefor comprising a friction pulley on at least one of said stub shafts between the warp beam and the bearing portion of the stub shaft, a single strap extending around said pulley and formed with a longitudinal slot at one end and a narrow strip at the other end to pass through said slot and along the same to give a substantially continuous friction surface of the full width of the strip where the slotted portion of the strip engages the surface of the pulley, the ends of the strap leading off the pulley and in substantially the same direction, tensioning means for said strap facilitating release of the strap to permit easy turning of the warp beam in either direction by hand and the easy removal of the strap from and application of the strap to the pulley.

In witness whereof I affix my signature.

STANLEY WILLIAMS.