

J. FULLER.
 FRICTION LET-OFF.
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949,268.

Patented Feb. 15, 1910.

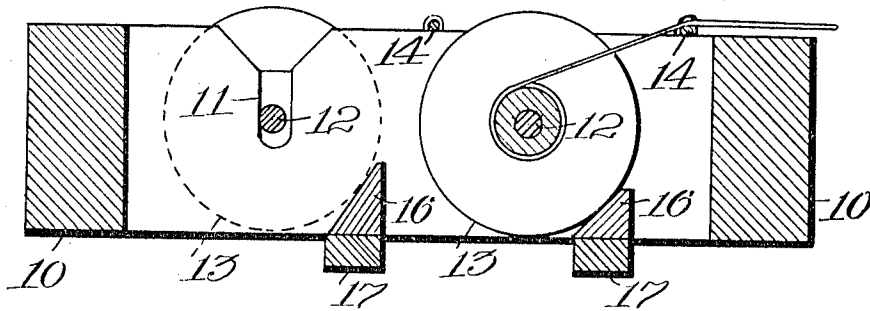


Fig. 2.

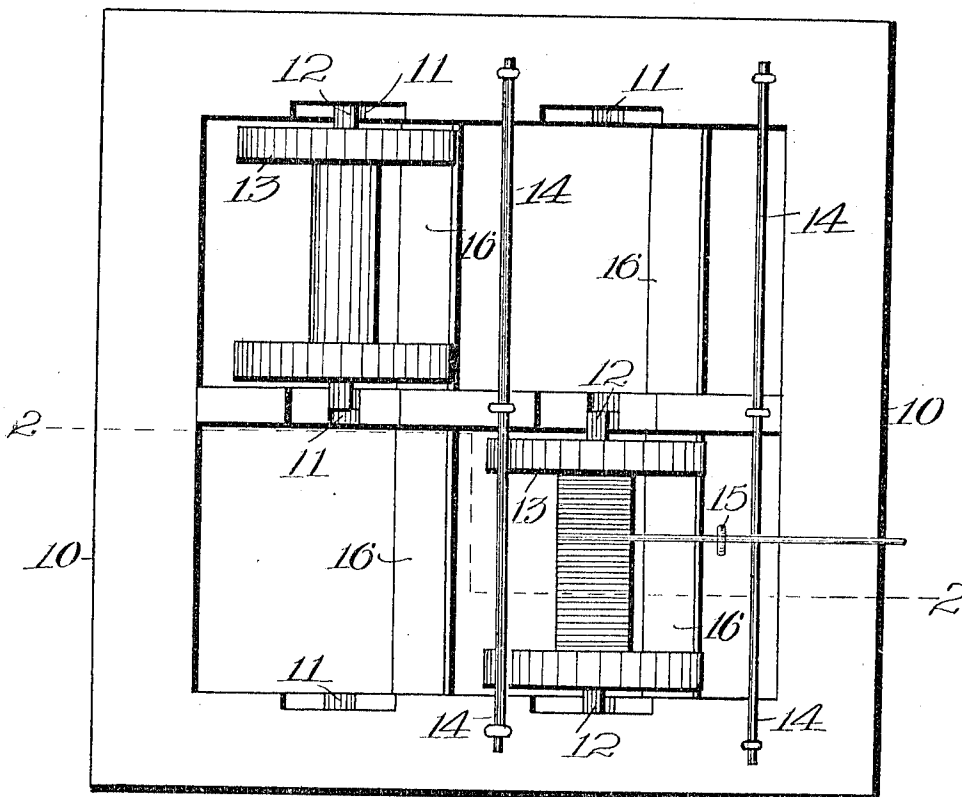


Fig. 1.

WITNESSES:

C. F. Mason
C. L. Hartnett

INVENTOR.

James Fuller

BY
Southgate & Southgate
 ATTORNEYS

UNITED STATES PATENT OFFICE.

JAMES FULLER, OF CLINTON, MASSACHUSETTS.

FRICTION LET-OFF.

949,268.

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To all whom it may concern:

Be it known that I, JAMES FULLER, a citizen of the United States, residing at Clinton, in the county of Worcester and State of Massachusetts, have invented a new and useful Friction Let-Off, of which the following is a specification.

This invention relates to friction let-offs for use with looms, such for example, as carpet looms, wherein some of the warps are usually held on spools and also in warp-dressing or spooling machines and the like. Ordinarily in the above classes of machines the warp threads are held taut by means of weights. When the tension is slight these weights slip way down and considerable time is consumed in getting them into proper position, and they are also liable to tangle up with each other on account of the long loops which support them.

The principal object of this invention is to hold the spools at their heads or flanges and axles by frictional means in such a way that said weights ordinarily can be done away with, or if they are used, there will be no danger of their slipping down far below the spools; also to provide an exceedingly simple friction device for this purpose.

Further objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawing, in which—

Figure 1 is a plan of a frame for holding four spools according to this invention showing two of the spools removed; and Fig. 2 is a sectional view of the same on the line 2—2 of Fig. 1.

In the drawing a frame 10 is shown substantially like those in common use. This frame is provided with vertical slots 11 extending downwardly from the upper edge thereof designed to support the axles or studs 12 of the warp spools 13. Only two of these spools are shown in position in the figures. The warp ordinarily extends from the spool up over a stationary rod 14, and between the spool and the warp is ordinarily hung a weight 15. This weight can be used in the present invention to advantage, but under many circumstances it can be entirely dispensed with, which is one of the advantages of this invention. Heretofore the axes of these spools have been mounted in the slots 11 and held in such a way that as the warp was unwound it would pull the axle over to the front side of the slot. Accord-

ing to the present invention the spool is held so that the stud bears on the rear side of the slot as shown clearly in the figures, and so that the flanges of the spool bear against a friction-plate 16 which is of a general triangular shape in cross section, the hypotenuse of which is tangent to the circumference of the flange of the spool and supports the same. This friction member can be held conveniently in any desired way on a bottom cross slat 17 which extends across the frame and assists in strengthening it, or it may be made integral with it if desired. It can be made of any desired material and its slanting surface can be made at any inclination that proves to be necessary to secure the required friction.

In operation the yarn is drawn over the bar 14 in the usual way, either with or without a weight between the spool and the bar. In either case the spool bears its weight on the inclined surface of the bar 16 and as the stud bears on the vertical rear surface of the slot the spool is wedged between these surfaces so that an ordinary light pull will not turn the spool, but when it is required to feed the yarn forward the machine gives the yarn sufficient pull to turn the spool and allow the yarn to be fed forward. The surface of the bar 16, however, affords so much friction that the feed is substantially uniform and there is really no necessity under ordinary circumstances of having a weight on the yarn to keep it taut. If, however, a weight is employed it has been found in practice that it is always substantially up in the frame and does not rotate the spool sufficiently to allow the weight to come down much below the frame. This results from the fact that the only function which the weight has when used with this invention, is to pull the yarn taut on the opposite side of the bar 14, and it does not at any time by itself rotate the spool, while under the old construction the weights sometimes did rotate the spools and thus cause them to unwind too fast. In this way the spool is held by its own weight, and it is relieved of the strain or pull on the yarn which causes it to let off the yarn when the weight is used under the old practice. This results in making a better back on the cloth, in saving yarn, and in saving much of the labor required in straightening out the weights and pulling them up. It has been found in practice that this results in a very

appreciable increase in the production of cloth as well as saving of waste yarn and labor.

While I have illustrated and described a preferred embodiment of the invention, I am aware that many modifications can be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claim. Therefore I do not wish to be limited to all the details of construction shown and described, but,

What I do claim is:—

In a friction let-off, the combination of a frame having downwardly extending slots in the sides thereof, a spool having an axle therethrough projecting at its ends into said slots, said frame also having a support for the flanges of the spool comprising a trans-

verse bar having a rear inclined bearing surface against which the flanges of the spool engage, said spool being entirely supported by said bar, and the contact of the axle with the rear surfaces of the slots, whereby when a positive pull is exerted on the material wound on the spool the spool will be lifted to bring the axle away from the surfaces of the slots, and when the pull is released the spool will drop back and become wedged between said surfaces and the rear surfaces of the slots.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

JAMES FULLER.

Witnesses:

LOTTUS S. READ,
FRANK R. BRIGHAM.