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FABRIC LET-BACK MEANS FOR LOOMS

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2 Sheets-Sheet 1

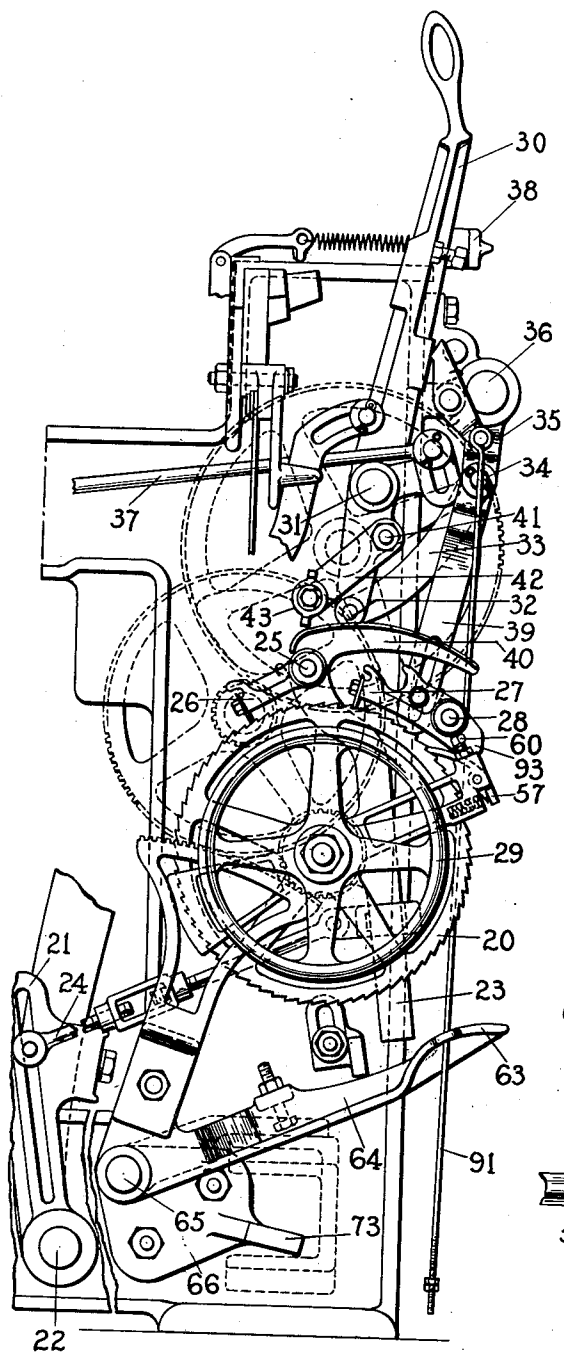


Fig. 1

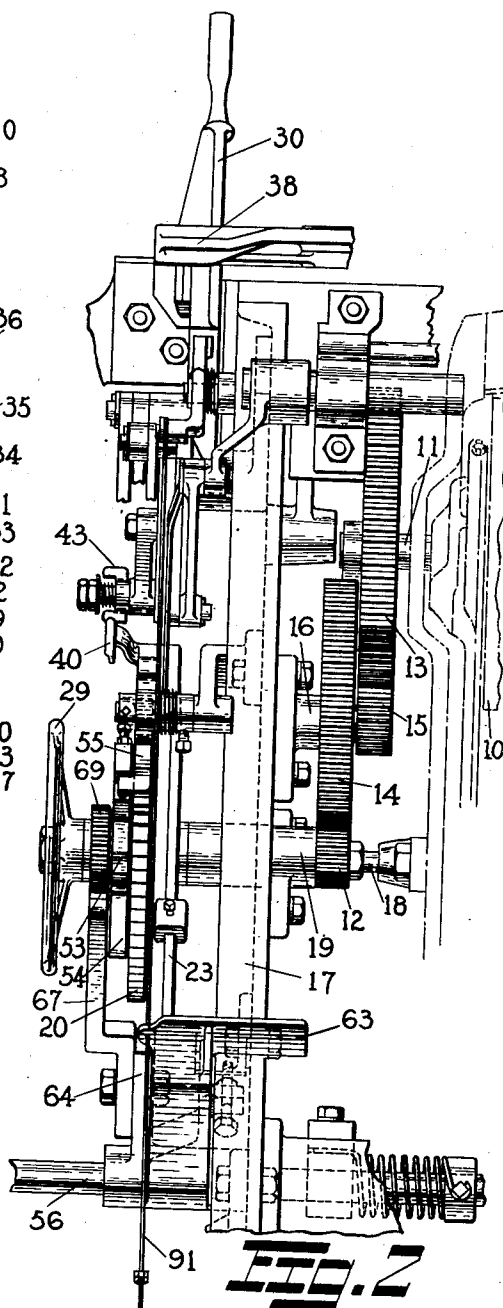


Fig. 2

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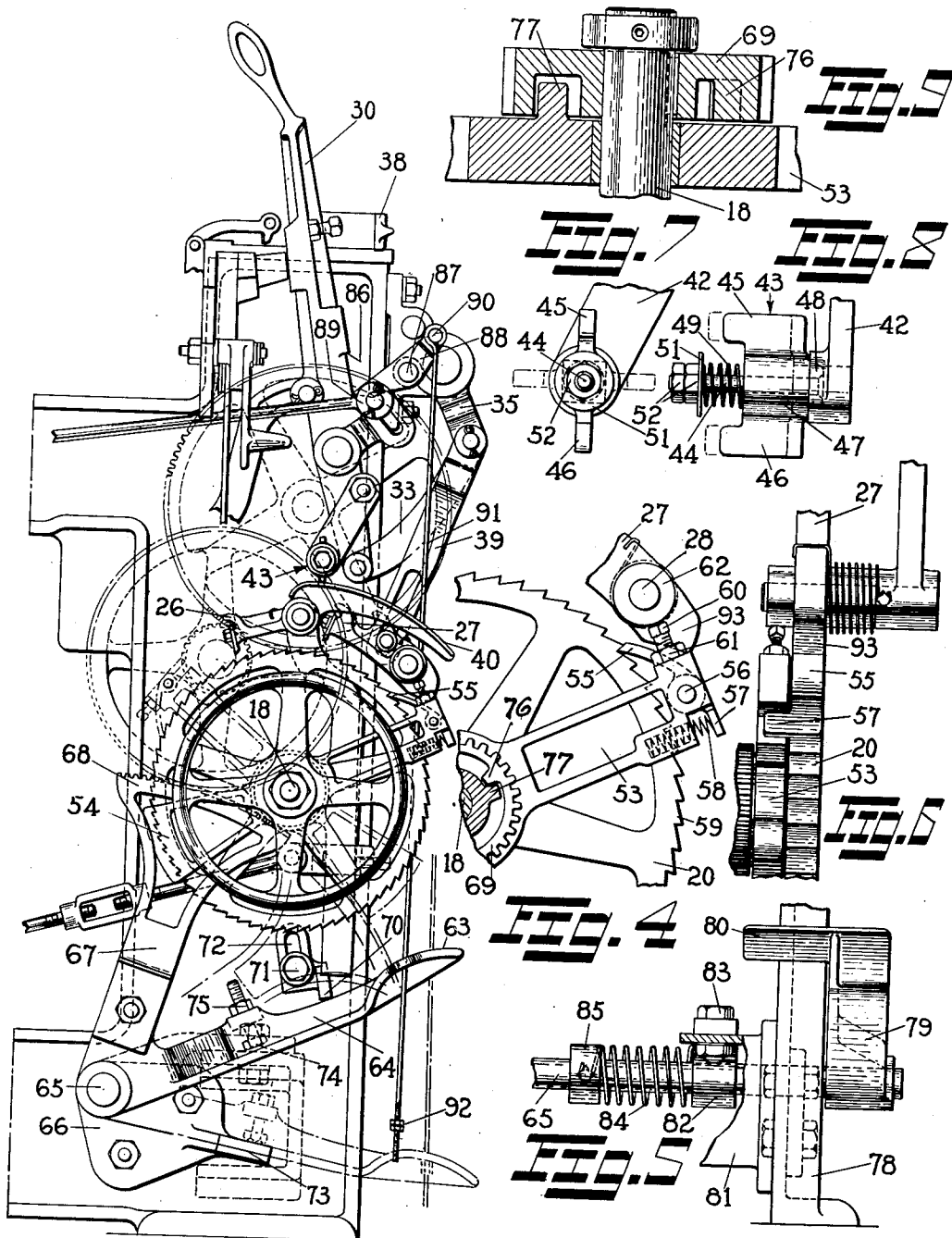


FIG. 1

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FABRIC LET-BACK MEANS FOR LOOMS

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Application September 17, 1952, Serial No. 310,065

12 Claims. (Cl. 139—313)

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This invention pertains to improvements in looms for weaving, and more particularly, to a fabric let-back mechanism applicable to such looms.

It is a general object of the invention to improve mechanisms for letting back the fabric take-up means of looms so as to slacken the warp threads for the purpose of eliminating insofar as is practicable, the stopping and/or set marks which occur during the weaving of some materials and which seriously detract from the quality thereof.

It is a more specific object to improve means which function automatically as the loom is stopped to let back the fabric take-up means for a relatively extended degree so that the warp threads may not become stretched during stopping periods of several minutes, and which shall also be operable with small effort on the part of the weaver to reset the take-up and thus the warp tension as may best serve for resuming the weaving function without introducing a perceptible and objectionable mark incidental to the stopping and starting of the loom.

It is a further object to improve upon the certainty of operation and to introduce safety features into the mechanism such as will be adapted to assuring that the loom may not be started until the tension has been properly reset, and further, which shall prevent any tendency of the mechanism to overrun or to tension to a greater extent than that intended, the fabric and warp threads upon the resetting movement after the loom has been stopped.

Other objects of the invention will become apparent from the following more detailed disclosure.

Heretofore fabric let-back means have been made a part of some looms, but their function has for the most part been circumscribed to one for letting the cloth back at most a few picks, that being more or less incidental to the repair of a faulty pick or the like. While weaving certain materials in which the warp threads are of a stretchy nature, it has been experienced that at each stop of the loom for more than a very brief interval, the point of stopping and restarting has been all too apparent in the finished fabric and its value obviously diminished thereby. These stop marks or "set marks" as they may be more accurately termed, become more serious if the loom is stopped for longer periods of time and thus the fabric fault occasioned by the stop is a function of the period of time during which the loom is at rest. With some warp materials

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a stop of as little as five minutes is relatively serious.

In an attempt to alleviate these troubles, it has been found that a let-back of the fabric for only a few picks has virtually no effect. Tension must be slackened to a point where stretching of the warp threads becomes negligible even over extended periods of time. To accomplish that a reverse rotation of from one-half to close to a full revolution of the conventional ratchet or pick wheel by which the fabric take-up is advanced has been found necessary.

Certain mechanisms have been devised for the purpose of attaining this desired end and it is toward the improvement of these devices that the present invention is directed. Reference is hereby made to United States Patent 2,591,538 and also to United States Application Serial No. 247,360 filed September 22, 1951, wherein the extent of let-back is something approaching a complete revolution of the pick wheel or ratchet wheel, and wherein certain indicator and resetting means have been provided such as are adapted to reestablish a proper relationship of the fabric take-up means so that the tension in the warp threads may be reset to precisely that value which is necessary for continuing the weaving without leaving an area in the fabric which would show that the loom had been stopped.

In the mechanism as described in the co-pending application, the loom operator is enabled to reset the mechanism by pressing a convenient foot pedal thereby reestablishing warp tension before employing the shipper lever or other means adapted to start the loom. Safety devices have been described which prevent restarting the loom by pulling the shipper lever until the tension has been reset, however, the mechanism as previously devised has been opened to possible faulty action upon resetting in that if the foot pedal by which tension has been reestablished is violently pressed, the resetting motion is of sufficient force to cause overrunning. Even though the indicator is employed as intended to mark the point at which the mechanism should be completely reset, particularly energetic pedal action may cause the ratchet wheel to overrun a few teeth thereby tensioning the warp thread to a greater extent than that it is intended. Obviously that is undesirable and the present invention is devoted toward the prevention of that occurrence and functions through the indicator to prevent any possible overtravel.

The starting of most looms is accomplished by pulling a shipper lever one of which is provided

at each end of the loom and considerable time and effort are frequently to be saved by working at the particular lever at the end of the loom where the weaver happens to find himself at the time he wishes to restart the machine. Accordingly the invention is further directed toward the provision of a resetting pedal at each end of the loom both of which are properly interconnected for resetting the let-back means thereby making it unnecessary to start the loom at one particular station with respect thereto.

Safety means has been described in the depending application above identified but that herein to be described in greater detail in following paragraphs is directed toward simplification and greater certainty of action along with other desired characteristics such as accessibility, ruggedness, and low cost of manufacture, installation and maintenance.

The invention will now be described in detail by reference to one preferred embodiment which it may take as illustrated in the accompanying figures of drawing wherein:

Fig. 1 is a left side elevation of as much of a conventional loom as is necessary to show the application of the invention thereto.

Fig. 2 is a front elevation of those parts shown in Fig. 1.

Fig. 3 is a view similar to Fig. 1, but showing certain parts after let-back has been effected, and the manner of resetting the parts.

Fig. 4 is a detail view of part of the indicator mechanism and the safety device operating therewith to prevent overtravel of parts upon resetting.

Fig. 5 is a detail view at the right hand end of the loom showing the added pedal by which the resetting function may be accomplished.

Fig. 6 is a front elevation of the mechanism of Fig. 4.

Figs. 7 and 8 are detail views of an improved feed pawl raising means which forms a part of the shipper lever.

Fig. 9 is a section showing in detail the interconnection between resetting parts.

Now referring to Figs. 1, 2 and 3, looms of the type to which the invention may be applied have as a part thereof some form of fabric take-up, a common example of which employs a fabric engaging and advancing roll 10 rotatable upon a shaft 11 and driven through a train of gears including a pinion 12, a gear 13 and a suitable number of intermediate gears 14 and 15, changeable as and for a purpose well known to those skilled in the art. These gears 14 and 15 are mounted on a stub shaft 16 fixed to loomside 17.

The pinion 12 is fixed at one end of a shaft 18 rotatable in a bearing 19 at the loomside and to the other end of which is also fixed a ratchet or pick wheel 20. Motion taken from any convenient moving part is employed to advance this ratchet wheel; as here shown, an arm 21 fixed to the end of rock shaft 22 oscillates a pivoted lever 23 through a link 24. At its upper end lever 23 has pivoted thereto at 25 a feed pawl 26. The latter engages the teeth of the ratchet wheel and advances it step by step as the lay of the loom swings to and fro. The lever arm and the link 24 are capable of being varied to provide a longer or shorter picking movement as required.

A stop pawl 27 is pivoted at 28 to a stud extending from the loomside and serves to maintain the ratchet wheel against reverse movement. Each of these pawls 26 and 27 is preferably

caused to engage the teeth of the ratchet wheel by being pressed thereon by a spring.

A hand wheel 29 is attached to the extreme end of shaft 18 and may be used to turn the roll 10 manually when desired.

Since the automatic let-back of the fabric is initiated by the stopping of the loom, either by the weaver or due to action of one of the stop motions, that means from which the let-back action is controlled will be described briefly. A shipper lever 30 is pivoted at 31 to the loom framework and at its lower end has connected at 32 a curved link 33 which attaches at its opposite end by a pin 34 to an arm 35 fixed at that end of starter shaft 36. Movement of shipper lever 30 toward the front of the loom engages a clutch or otherwise connects power to the mechanism and also, through link 37, releases a brake. Movement to the rear affects the parts to cause stopping. Lever 30 may be engaged by hand or may be pressed to rear by lever 38 and other stop motion parts all in a manner understood by those conversant with the art.

As the loom stops the stop pawl 27 is withdrawn from the teeth of the wheel 20 by action of a slotted link 39 also attached at pivot pin 34, Fig. 3. In the event the loom is set for let-back of the fabric, pawl 26 is also withdrawn so that there is then no restraining influence at all upon the take-up means to prevent its reverse rotation under the tension of the warp.

Pawl 26 has a lifting arm or finger 40 against the upper edge of which a means attached to form an operative portion of the shipper lever may press. The shipper lever has affixed thereto by the bolt 41, or by other suitable connection, a short, angularly disposed arm 42 to the lower end of which is attached a contacting means by which the feed pawl is raised to inactive position. This latter means comprises a winged member generally indicated by numeral 43 and which is shown in greater detail in Figs. 7 and 8. Here the arm 42 has a stud 44 threaded into its relatively free end and on this stud is rotatably mounted, except as will hereinafter be explained, the winged member. This member has horizontally disposed wings or projections 45 and 46 extending from the hub portion 47, the latter being formed with a squared projection 48 which is adapted to fit into a complementary squared opening in the end of the arm 42. This winged member is normally pressed by means of spring 49 to a position such that the squared end fits into the opening or socket complementary thereto, this spring being under compression between the end of the hub and a second washer 51 and adjusting and locking nuts 52. The disposal of the squared projection and opening may be reversed.

When the winged member is in vertical position as shown in Figs. 1, 7 and 8, the lowermost wing is adapted to strike against the top surface of the finger 40 thereby to raise the pawl whenever the shipper lever 30 is swung to loom stopped position. That is illustrated at Fig. 3. If the let-back is not to be used, then the winged contact member is pulled outwardly against the spring 49 to be rotated 90 degrees whereupon, when released so that the parts assume a more or less horizontal position, there will be no effect upon the finger 40 and thus no letting back of the fabric since the pawl will not be disengaged from the ratchet wheel. With some types of fabric or materials, it is not necessary to provide for let-back as set marks may not be a problem

and therefore the let-back function may be dispensed with and the mechanism, while present and available on the loom, is merely permitted to remain idle.

Assuming that the pawls are both released as above explained, the ratchet wheel will rotate reversely and that reverse movement is limited only by the contact of certain parts of the indicator mechanism presently to be described as the same are carried around by the ratchet wheel. It is not necessary that the let-back movement be more than approximately one-half to three-quarters of a revolution and, in fact, the let-back action is merely the result of tension in the warp threads which will be relaxed to a point where no further rotation of the parts is likely by the time the ratchet wheel has rotated for that part of a revolution.

The indicator comprises an arm 53 freely pivoted on the shaft 18 and being counterweighted by an oppositely disposed portion 54 by which it is maintained in substantial balance. This arm 53 carries a pawl 55 pivoted at 56 and having an oppositely directed, laterally extending projection 57 beneath which is confined a spring 58 housed within a suitable well or opening formed in the arm 53 and adapted to press outwardly against the part 57 thereby to maintain the pawl itself in engagement with the teeth 59 of the wheel. This indicator normally functions in the full line positions illustrated in Figs. 1, 3 and 4 at which time a stop screw 60 locked in adjusted position by the nut 61 bears against a collar 62 on the stud 28. Of course, the ratchet wheel is continuously being picked in a counter-clockwise direction as shown in these figures when the loom is in operation, and the pawl 55 merely permits the ratchet wheel to advance as the teeth move beneath it. When the feed and stop pawls have been raised, the let-back function takes place and at that time the indicator must be carried around clockwise with the reversely moving ratchet wheel and may finally occupy a position such as that illustrated in the dot-and-dash lines, Fig. 3.

The means employed to reset the take-up and warp tension preferably comprises at least one foot pedal 63 at the end of an arm 64 which is in turn pivoted at 65 on a stud projecting from a bracket 66 bolted to the loomside, or to any other convenient fixed part of the loom framework. The arm 64 has fixed thereto a second, more or less upwardly directed arm 67 at the end of which is provided a sector 68 having teeth which mesh with a pinion 69 which is relatively free to be rotated on the shaft 18 to the extent provided by angular movement of the sector and arm 64, the latter being stopped in each direction by appropriate stop means.

In the upward direction the arm is limited in its movement as it engages a lug 70 which projects outwardly from a bracket or the like which is held in place by bolt 71 extending through a slotted opening 72 in the loomside. The bracket 66 provides a second stopping lug 73 which is engaged by adjustable stop screw 74 threaded into a part of the arm 64 and locked in adjusted position by means of nut 75.

The pinion 69 free on shaft 18 is adapted to pick up the indicator arm 53 whenever the same has been rotated around to the dot-and-dash line position, Fig. 3, or to some similar position and to return it and necessarily the ratchet wheel 59 with it to the set position indicated in full lines in that and other figures. That is

accomplished through the lugs 76 and 77, the first being integrally or otherwise formed as a part of the pinion 69 which, as shown in Fig. 9, is undercut to provide for movement of the parts and for the projection of the lug 77 which is a part of the arm 53 into the pinion 69 as shown. The dimensions of the lugs are such that about three-quarters of a revolution of arm 53 is possible without contacting the lug on the pinion which will have been caused to occupy a position three-quarters of a turn or more away from the lug 77 after the pedal 63 and sector 68 have been returned to their relatively inactive position. Then when it is desired to reset the mechanism, a slight movement of pedal 63 and corresponding movement of sector 68 turns the pinion 69 sufficiently for the lug 76 to pick up lug 77 on the arm and thereafter further movement of the pedal to lowermost position rotates both the pinion and the arm more or less as a unit until the stop screw 60 engages against the collar 62 as illustrated in Fig. 4, whereupon further movement is impossible and the stop screw 74 is so set as to engage the lug 73 at that time thereby to prevent undue strain on the parts in the event the operator places considerable weight or pressure against the pedal.

The shaft 65 extends across the loom and through an appropriate bracket and bearing at the opposite loomside 78, Fig. 5, having fixed at that side of the loom on a short projection of the shaft, a second arm 79 and pedal 80. This pedal may be employed in a manner similar to the pedal 63 for accomplishing the same results. The front girt 81 is provided with a bearing or bracket 82 attached by means of the bolt 83 and through which the shaft passes, and at that point, there is also fixed one end of a coil spring 84 which has its opposite end connected to a collar 85 fixed by means of a set screw or in any other satisfactory manner to the shaft itself. This spring 84 is placed under sufficient tension so that it places torsional force on the shaft 65 to maintain the pedals in uppermost or inactive position and also to return the sector and pinion 69 to their relatively inactive position or that position in which they are so disposed as to be in readiness for picking up the indicator after let-back of the fabric preparatory to turning the indicator parts to active position and for resetting the take-up to reestablish tension in the warp threads. While one spring 84 may be employed as herein shown, if more tension is desired, it has been found that a spring at each end of the shaft 65 may advantageously be employed.

With so much of the device as has been described to this point, the loom may be stopped whereupon the fabric will automatically be let back and the parts may, when desired, be reset preparatory to starting the loom again. However, the loom may also be started without resetting the take-up in which event the warp tension would be entirely inadequate and imperfect fabric would be woven. To obviate such possibility a safety means is incorporated by means of which weaving may not be resumed until the warp tension has been restored.

The shipper lever 30 is provided with a shoulder 86 and forwardly and in alignment with the surface of the shipper lever just below the shoulder is pivoted at 87 a two-armed lever 88 the relatively free end of which is pointed and bevelled as at 89, the said point being adapted to engage beneath the shoulder 86.

The opposite end of this arm is connected at 90

to a wire or other link 91 which extends downwardly to pass through a suitable opening in the pedal 63 beneath which the link is threaded and provided with stop or motion limiting nuts 92. By adjustment of these nuts the extent to which the pedal, when moved to lowermost position, will swing the lever 88 about its pivot may be regulated. The lever 88 is spring urged in a counter clockwise direction, Figs. 1 and 3, so that it always tends to assume a position in which it will be in alignment with and so disposed as to prevent pulling the lever forwardly to start the loom except at such time as the pedal is fully depressed whereupon the point 89 will be raised above shoulder 86. At that time, the angular disposal of the lever and the fact that the surface 89 is bevelled will permit the shipper lever 30 to be pulled forwardly at which time this lever 88 is moved to the position illustrated in Fig. 1.

In order to prevent overtravel of the ratchet wheel 20 at the time of resetting warp tension, the stop pawl 27, shown to a somewhat enlarged scale in Fig. 4, and which is spring urged about the pivot 23 as previously described, is extended forwardly and downwardly of the loom to present a cam portion 93, the cam surface portion of which is formed substantially in conformity to the top surface of the pawl 55. As the parts assume the position of Fig. 1 in which the loom may be considered as being in operation, this cam 93 is raised somewhat since the pawl itself is permitted to drop down onto the ratchet wheel teeth. Stopping of the loom at which time shipper lever 30 moves to a position to swing arm 35 as illustrated in Fig. 3, the link 39 serves to lift the stop pawl and at that time the cam 93 moves down to a position in which it actually prevents lifting of the pawl 55 from one tooth to the next and therefore will not permit the rotation of the ratchet wheel 20 since the teeth thereon may not pass the pawl 55. In effect, this mechanism constitutes a safety or locking means past which the ratchet wheel and indicator may not be moved once they have attained the position occupied by them prior to the letting back of the fabric when the loom was stopped.

In operation it is to be assumed that the winged member 43 has been set in its vertical position so as to press downwardly on finger 40 and lift the feed pawl as the loom is stopped incidental to a movement of the shipper lever 30 from the position of Fig. 1 to that of Fig. 3. That stopping movement also affects the stop pawl 27 lifting it from the teeth of the ratchet wheel thereby freeing the wheel and gearing driven thereby so that the tension in the warp threads serves to rotate the fabric take-up means reversely, that reverse rotation merely being resisted by friction and inertia in the parts which are incidental to effecting the take-up function. The ratchet wheel 20 actually moves reversely for about three-quarters of a turn and as it does so, the teeth which are engaged with the indicator pawl 55 move the indicator mechanism around to more or less the position illustrated in Fig. 3 at the dot-and-dash line position of these parts. The pedals 63 and 80 and the sector 68 and pinion 69 merely remain stationary during the let-back movement, being maintained in their inactive position by a spring or springs such as the spring 84, Fig. 5.

When it is desired to restart the loom, the tension in the fabric and in the warp threads is to be reset along with the setting of the take-up mechanism to a position such that it may continue in operation and take up the fabric without leaving any visible indication of the stopping

and starting of the mechanism, or of the cessation of weaving, in the finished material. Either one of the pedals may be pushed downwardly to its extreme position as defined by stop screw 74 striking abutment or lug 73 at which time the pinion 69 is rotated by means of the sector 68. The lug 76 on the pinion 69 almost immediately picks up a cooperating lug 77 on the indicator hub, Figs. 4 and 9, and rotation of the pinion thus causes the indicator to move counterclockwise back to its operative position, Figs. 3 and 4. At that time the cam 93 will be in the position indicated in Figs. 3 and 4; also, the stop and feed pawls are still in raised position since the loom may not be started as lever 30 is locked in the position of Fig. 3 until the pedal 53 has moved almost to its fullest extent of travel whereupon it swings lever 88 against the tension of a spring to a point where the forward inclined or bevelled part 89 of the lever passes the shoulder 86. At that time the lever may then be pulled to starting position, the pedal 63 still being held downwardly until the lever has moved far enough to release the feed and stop pawls whereupon normal functioning of the mechanism may be resumed. This cam 93 prevents overtravel of the ratchet wheel 20 in a manner hereinbefore described.

While one embodiment of the invention has been disclosed, it is to be understood that the inventive concept may be carried out in a number of ways. The invention is, therefore, not to be limited to the precise details described, but is intended to embrace all variations and modifications thereof falling within the spirit of the invention and the scope of the claims.

I claim:

1. For a loom having a fabric take-up means including a roll and means to drive said roll including a gear train and a ratchet wheel, a feed pawl and a stop pawl for said ratchet wheel, and a loom knock-off means including a shipper lever, a fabric let-back means which comprises means to disengage said pawls from the ratchet wheel as the loom is knocked off, an indicator carried by the ratchet wheel past which the wheel may move in its rotation incidental to taking up fabric, but further adapted to be carried around with said wheel when the latter rotates reversely, and means for resetting the ratchet wheel to a predetermined position through said indicator which comprises a pinion freely rotatable concentrically with said ratchet wheel and indicator, a pedal and gear means meshing with said pinion for rotating it, and lugs on said pinion and indicator by means of which movement of the pinion is imparted to the indicator.

2. For a loom having a fabric take-up means including a roll and means to drive said roll including a gear train and a ratchet wheel, a feed pawl and a stop pawl for said ratchet wheel, and a loom knock-off means including a shipper lever, a fabric let-back means which comprises means to disengage said pawls from the ratchet wheel as the loom is knocked off, an indicator carried by the ratchet wheel past which the wheel may move in its rotation incidental to taking up fabric, but further adapted to be carried around with said wheel when the latter rotates reversely, and means for resetting the ratchet wheel to a predetermined position through said indicator which comprises a pinion freely rotatable concentrically with said ratchet wheel and indicator, a pedal and sector means operated thereby for rotating said pinion a partial revolution, a lug on said indicator and cooperating means on the

pinion for picking up said lug and imparting motion through it to the indicator, but permitting free return movement of the pinion to initial position without affecting said indicator.

3. For a loom having a fabric take-up means including a roll and means to drive said roll including a gear train and a ratchet wheel, a feed pawl and a stop pawl for said ratchet wheel, and a loom knock-off means including a shipper lever, a fabric let-back means which comprises means to disengage said pawls from the ratchet wheel as the loom is knocked off, an indicator carried by the ratchet wheel past which the wheel may move in its rotation incidental to taking up fabric, but further adapted to be carried around with said wheel when the latter rotates reversely, and means under control of the loom operator for resetting the ratchet wheel to a predetermined position through said indicator, said indicator comprising an arm and a spring pressed pawl carried by the arm and engaged with the teeth of said ratchet wheel, and a safety means controlled by the said stop pawl for locking the pawl carried by said indicator arm in engagement with the teeth of the wheel after resetting and until the loom is restarted.

4. For a loom having a fabric take-up means including a roll and means to drive said roll including a gear train and a ratchet wheel, a feed pawl and a stop pawl for said ratchet wheel, and a loom knock-off means including a shipper lever, a fabric let-back means which comprises means to disengage said pawls from the ratchet wheel as the loom is knocked off, an indicator carried by the ratchet wheel past which the wheel may move in its rotation incidental to taking up fabric, but further adapted to be carried around with said wheel when the latter rotates reversely, and means under control of the loom operator for resetting the ratchet wheel to a predetermined position through said indicator, said indicator comprising an arm and a spring pressed pawl carried by the arm and engaged with the teeth of said ratchet wheel, and safety means controlled by the said stop pawl for preventing movement of the pawl carried by said indicator arm radially of the ratchet wheel to prevent passage of a ratchet wheel tooth beneath the said pawl after resetting and until the loom is restarted.

5. For a loom having a fabric take-up means including a roll and means to drive said roll including a gear train and a ratchet wheel, a feed pawl and a stop pawl for said ratchet wheel, and a loom knock-off means including a shipper lever, a fabric let-back means which comprises means to disengage said pawls from the ratchet wheel as the loom is knocked off, an indicator carried by the ratchet wheel past which the wheel may move in its rotation incidental to taking up fabric, but further adapted to be carried around with said wheel when the latter rotates reversely, and means under control of the loom operator for resetting the ratchet wheel to a predetermined position through said indicator, said indicator comprising an arm and a spring pressed pawl carried by the arm and engaged with the teeth of said ratchet wheel, and safety means controlled by the said stop pawl for preventing the ratchet wheel from moving ahead of the indicator at the termination of the resetting movement which comprises a cam moved by the stop pawl to press the indicator pawl into full engagement with the ratchet wheel teeth as the stop pawl is raised to inactive position, but retractable as the stop pawl is moved to its active position.

6. For a loom having a fabric take-up means including a roll and means to drive said roll including a gear train, a shaft and a ratchet wheel, a feed pawl and a stop pawl for said ratchet wheel, and a loom knock-off means including a shipper lever, a fabric let-back means which comprises means to disengage said pawls from the ratchet wheel as the loom is knocked off, an indicator carried by the shaft and ratchet wheel past which the wheel may move in its rotation incidental to taking up fabric, but further adapted to be carried around with said wheel when the latter rotates reversely, and means under control of the loom operator for resetting the ratchet wheel to a predetermined position through said indicator, said indicator comprising an arm and a spring pressed pawl carried by the arm and engaged with the teeth of said ratchet wheel, and safety means controlled by the said stop pawl for preventing the ratchet wheel from moving ahead of the indicator at the termination of the resetting movement which comprises an extension to the said stop pawl and a cam surface on said extension so positioned as to engage the indicator pawl and hold it in engagement with the ratchet wheel teeth while the said stop pawl is in its withdrawn and inactive position.

7. For a loom having a fabric take-up means including a roll and means to drive said roll including a gear train, a shaft and a ratchet wheel on said shaft, a feed pawl and a stop pawl for said ratchet wheel, and a loom knock-off means including a shipper lever, a fabric let-back means which comprises means to disengage said pawls from the ratchet wheel as the loom is knocked off, an indicator carried by the shaft and ratchet wheel past which the wheel may move in its rotation incidental to taking up fabric, but further adapted to be carried around with the wheel when the latter rotates reversely, and means for resetting the take-up means including the ratchet wheel and indicator which comprises a pinion freely rotatable on said shaft, a toothed means meshing with said pinion, a shaft extending across said loom to which said toothed means is fixed, foot pedals, one fixed to each end of said shaft, stop means limiting the oscillatory movement of said shaft and spring means normally tending to maintain said shaft, toothed means and pedals in a position preparatory to effecting a resetting movement.

8. For a loom having a fabric take-up means including a roll and means to drive said roll including a gear train, a shaft and a ratchet wheel on said shaft, a feed pawl and a stop pawl for said ratchet wheel, and a loom knock-off means including a shipper lever, a fabric let-back means which comprises means to disengage said pawls from the ratchet wheel as the loom is knocked off, an indicator carried by the shaft and ratchet wheel past which the wheel may move in its rotation incidental to taking up fabric, but further adapted to be carried around with the wheel when the latter rotates reversely, and means for resetting the take-up means including the ratchet wheel and indicator which comprises a pinion freely rotatable on said shaft, a toothed sector meshing with said pinion, a shaft extending across said loom to which said sector is fixed, foot pedals, one fixed to each end of said shaft, adjustable stop means for limiting the oscillatory movement of said shaft, pedals and sector, and a coil spring on said shaft and maintained under torsional stress for biasing said shaft, sector and pedals to

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a position preparatory to effecting a resetting movement.

9. For a loom having a fabric take-up means including a roll and a means to drive said roll including a gear train and a ratchet wheel, a feed pawl and a stop pawl for said ratchet wheel, and a loom knock-off means including a shipper lever, a fabric let-back means which comprises means to disengage said pawls from the ratchet wheel as the loom is knocked off, an indicator carried by the ratchet wheel past which the wheel may move in its rotation incidental to taking up fabric, but further adapted to be carried around with the wheel when the latter rotates reversely, means under control of the loom operator for resetting the ratchet wheel to a predetermined position as determined by said indicator, and a means for locking said shipper lever in loom stopping position which comprises a pivot fixed adjacent the front of said loom, a latch carried on said pivot and a spring for maintaining said latch in a position aligned with said shipper lever to prevent its movement to loom starting position, and a link connecting said latch and means for resetting the ratchet wheel and for swinging said latch to a position to permit starting the loom as the tension in the fabric is reset.

10. For a loom having a fabric take-up means including a roll and a means to drive said roll including a gear train and a ratchet wheel, a feed pawl and a stop pawl for said ratchet wheel, and a loom knock-off means including a shipper lever, a fabric let-back means which comprises means to disengage said pawls from the ratchet wheel as the loom is knocked off, an indicator carried by the ratchet wheel past which the wheel may move in its rotation incidental to taking up fabric, but further adapted to be carried around with the wheel when the latter rotates reversely, a foot pedal under control of the loom operator for resetting the ratchet wheel to a predetermined position as determined by said indicator, and a means for locking said shipper lever in loom stopping position which comprises a pivot fixed adjacent the front of said loom, a latch carried on said pivot to be swung to and from a position substantially transverse to said shipper lever thereby to prevent movement of the lever, a spring for biasing the latch into said position transverse to the shipper lever and a link connecting said latch and foot pedal to swing the latch to a position to permit starting the loom as the pedal is used to reset the fabric take-up.

11. For a loom having a fabric take-up means including a roll and means to drive said roll including a gear train and a ratchet wheel, a feed pawl and a stop pawl engageable with said wheel, and a loom knock-off means including a shipper

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lever, a fabric let-back means which comprises means to disengage said stop pawl from the ratchet wheel when the loom is stopped, a means to disengage the feed pawl from the ratchet wheel as the loom is stopped which means comprises a winged member carried by the shipper lever and so devised as to contact a part of the feed pawl and to lift it from the ratchet wheel teeth when in a substantially vertical position, but to be ineffective thereon when in substantially horizontal position, and means for releasably holding said winged means in either position, and an indicator carried by the ratchet wheel past which the wheel may move in its rotation incidental to taking up fabric, but further adapted to be carried around with the wheel when the latter rotates reversely, and means under control of the loom operator for resetting the ratchet wheel to a predetermined position as determined by said indicator.

12. For a loom having a fabric take-up means including a roll and means to drive said roll including a gear train and a ratchet wheel, a feed pawl and a stop pawl engageable with said wheel, and a loom knock-off means including a shipper lever, a fabric let-back means which comprises means to disengage said stop pawl from the ratchet wheel when the loom is stopped, a means to disengage the feed pawl from the ratchet wheel as the loom is stopped which means comprises a winged member carried by the shipper lever and so devised as to contact a part of the feed pawl and to lift it from the ratchet wheel teeth when in a substantially vertical position, but to be ineffective thereon when in substantially horizontal position, and means for releasably holding said winged means in either position which comprises a squared projection on said means, a complementary opening into which said projection is received and spring means for holding said winged means in a position such that the projection and opening are interengaged, but permitting manual disengagement for changing the angular position of the winged means, and an indicator carried by the ratchet wheel past which the wheel may move in its rotation incidental to taking up fabric, but further adapted to be carried around with the wheel when the latter rotates reversely, and means under control of the loom operator for resetting the ratchet wheel to a predetermined position as determined by said indicator.

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