Aug. 17, 1965 W. J. KOYDER 3,200,852

TAKE-UP MECHANISM FOR A LOOM

Filed Feb. 11, 1963 4 Sheets-Sheet 1

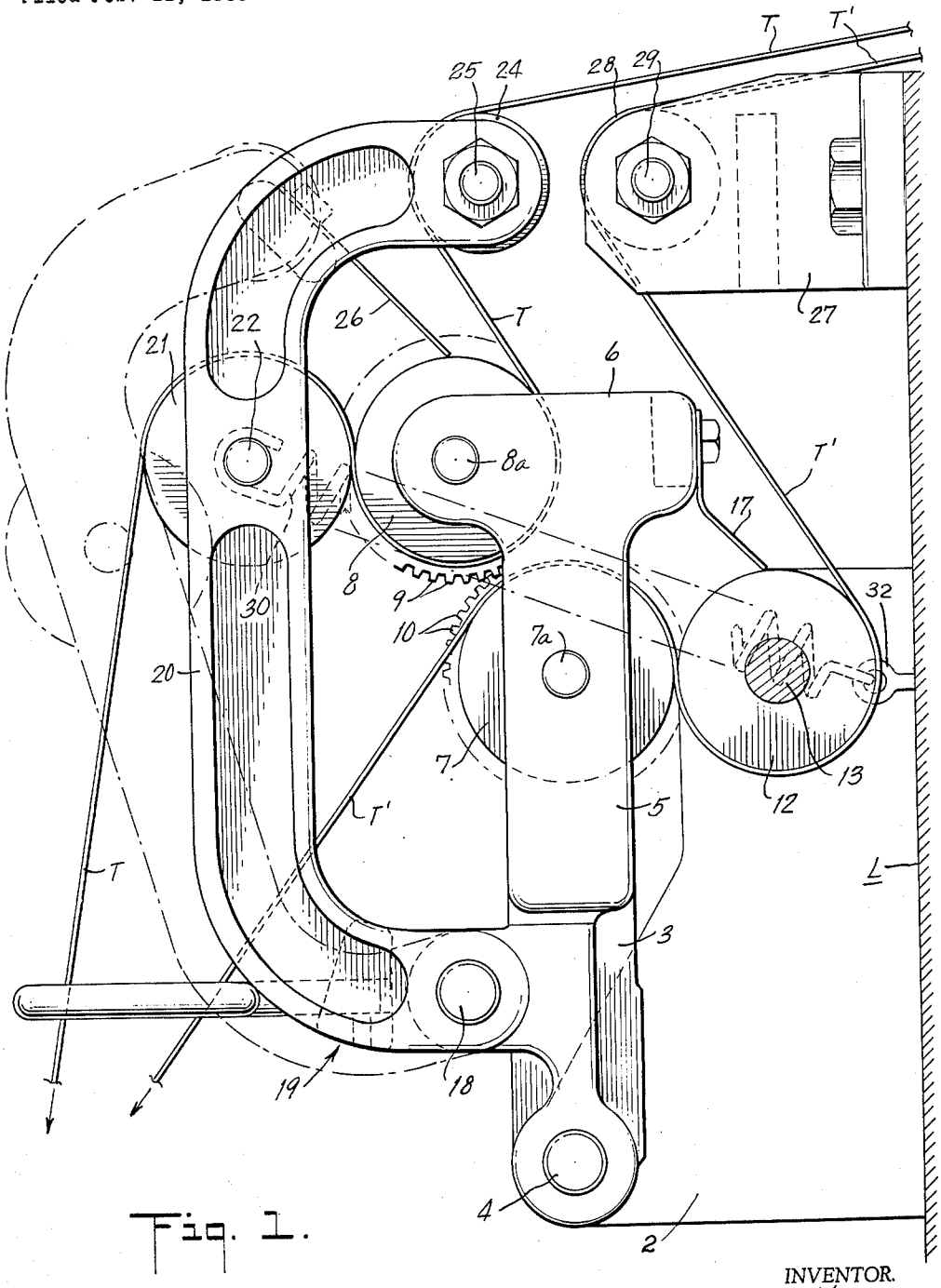

Fig. 1.

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Filed Feb. 11, 1963 4 Sheets-Sheet 2

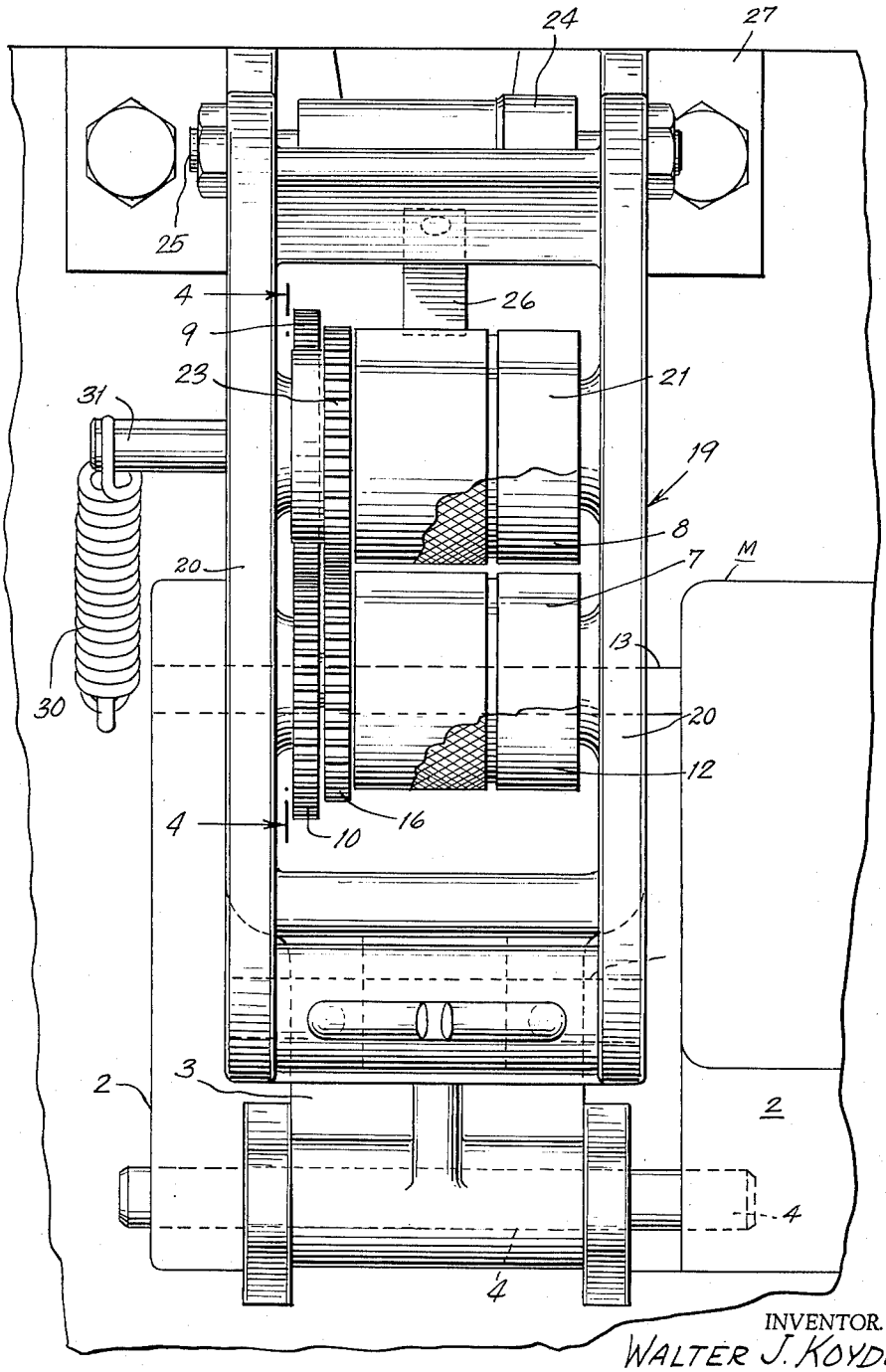

Fig. 2.

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TAKE-UP MECHANISM FOR A LOOM

Filed Feb. 11, 1963 4 Sheets-Sheet 3

Fig. 3.

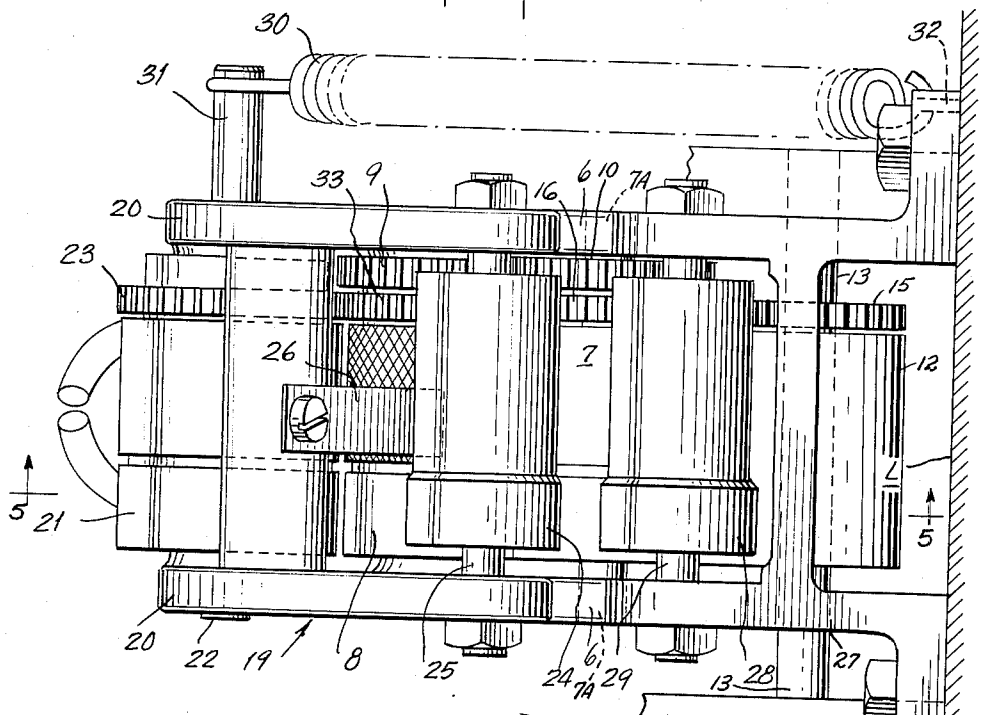
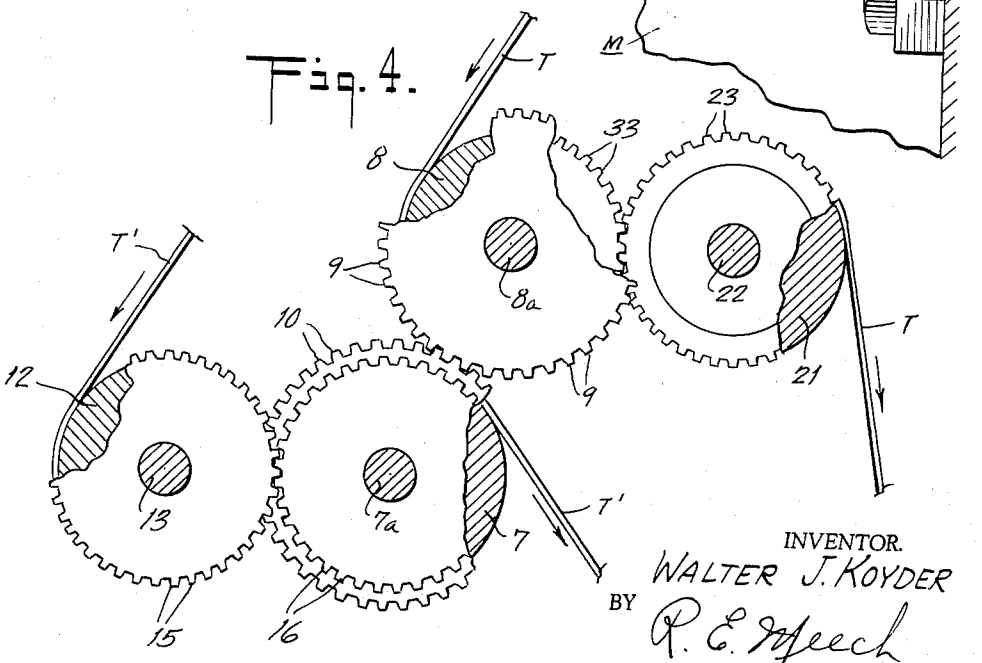


Fig. 4.



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TAKE-UP MECHANISM FOR A LOOM

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4 Sheets-Sheet 4

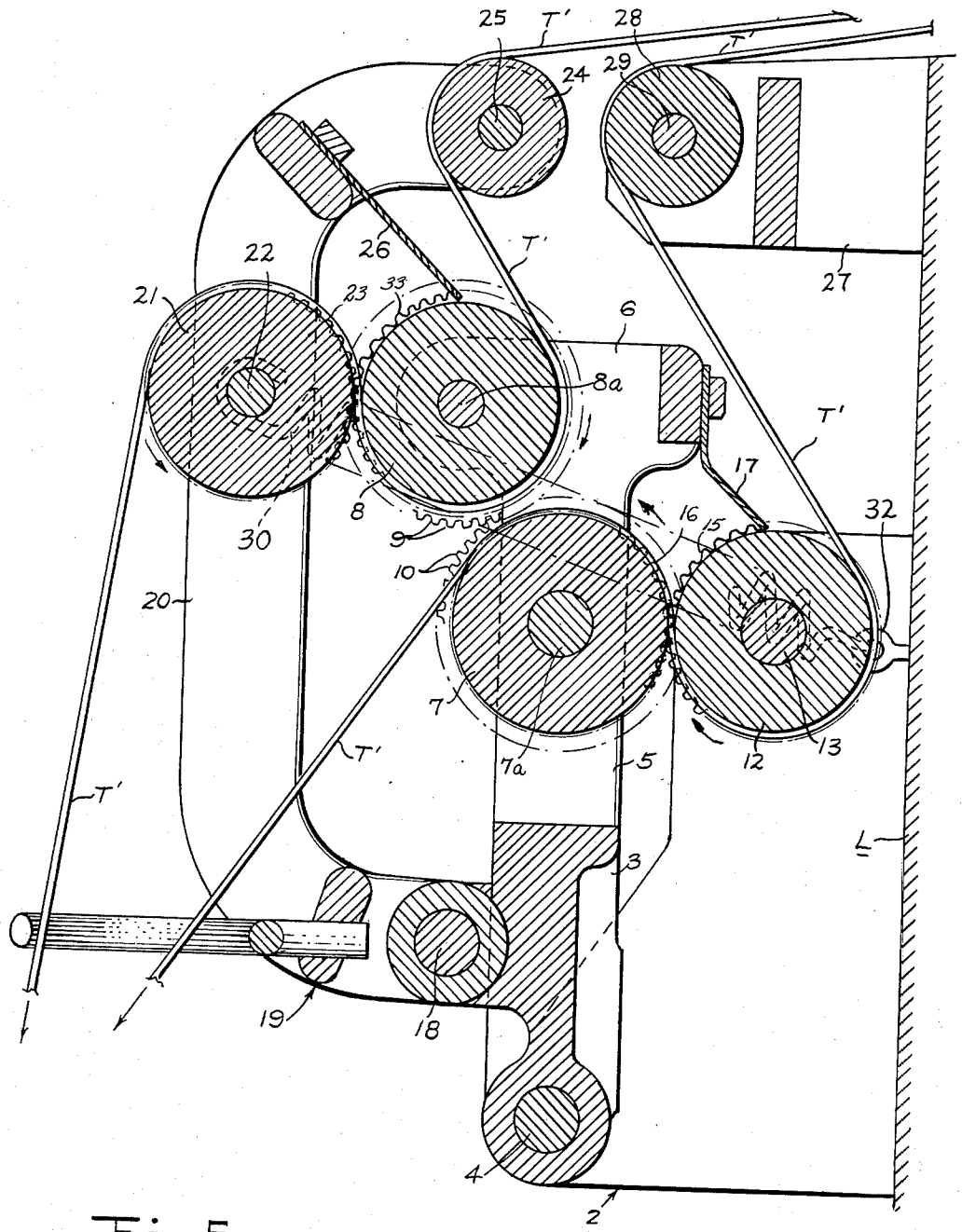

Fig. 5

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3,200,852

TAKE-UP MECHANISM FOR A LOOM

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9 Claims. (Cl. 139—304)

This invention relates to a take-up mechanism for looms which is particularly adaptable for needle or shuttleless looms for weaving narrow fabrics and the like.

It is now conventional practice to weave two narrow fabrics, particularly zipper tapes, simultaneously in needle or shuttleless looms in a so-called piggy-back arrangement, i.e., one tape above the other. Heretofore, such tapes were delivered to a single take-up roll of the take-up mechanism in piggy-back style, i.e., one on top of the other but such a take-up means was found to be unsatisfactory, primarily, for the reason that the top tape in such fashion would, obviously, be delivered and pulled from the loom at a rate of speed slightly faster than the lower or bottom tape which, obviously, would result in a discrepancy in the weaving operation. That is to say, one tape would have a tighter weave or more picks than the other and the tapes would not be uniform which, of course, is objectionable.

Accordingly, it is the general object of the present invention to provide a take-up mechanism for looms in which the above disadvantages would be eliminated whereby identical tapes of uniform quality and construction would be produced from such looms.

It is a more specific object of the invention to provide a separate take-up mechanism for each tape which functions independent of the other whereby each tape is delivered from the loom at identical rates of speed.

It is another object of this invention to provide an improved take-up mechanism for looms which is simple and inexpensive in its construction and one which may be easily and conveniently incorporated with existing looms.

Various other objects and advantages of this invention will be more apparent in the course of the following specification, and will be particularly pointed out in the appended claims.

In the accompanying drawings, there is shown for the purpose of illustration, an embodiment which the invention may assume in practice.

In these drawings:

FIG. 1 is a side elevational view of the improved take-up mechanism constructed in accordance with the present invention,

FIG. 2 is a front elevational view thereof,

FIG. 3 is a top view of the same,

FIG. 4 is a sectional view taken on line 4—4 of FIG. 2, and

FIG. 5 is a sectional view taken on line 5—5 of FIG. 3.

Referring more particularly to the drawings there is shown the front wall L at the delivery end of a needle or shuttleless loom of the type disclosed in the patent to Osborne Firing et al. No. 2,497,077, issued February 14, 1950 with which the present invention is adapted to be incorporated.

According to the present invention, there is provided a pair of spaced-apart lower brackets 2 which are affixed to and project outwardly from the frame or front wall 2 of the loom, as more clearly shown in FIGS. 1 and 2 of the drawings. Between these brackets 2, there is arranged an upwardly extending rockable auxiliary frame 3 having the lower end thereof pivotally attached to these brackets by means of a pin 4. The upper portion of this auxiliary frame is forked so as to provide a pair of spaced-apart parallel arms 5 with each having a cross-head portion 6 arranged on the upper end thereof.

Between these arms 5, there is arranged a guide roll 7 which is journalled thereto, as at 7a. In the forward side of the cross-head 6 there is arranged a feed roll 8 journalled therein, as at 8a, and having gear teeth 9 at one end which mesh with corresponding gear teeth 10 arranged at the end of the guide roll 7.

Directly opposite the guide roll 7, and with which it cooperates, there is arranged another feed roll 12 which is secured to a drive shaft 13 suitably journaled on the side wall of the loom L as more clearly shown in FIG. 2 of the drawings. At one end of this feed roll 12 there is arranged gear teeth 15 which mesh with corresponding gear teeth 16 arranged at the end of the guide roll 7. It will be understood that this shaft 13 may be driven by the loom mechanism or by any other suitable source of power such as a motor M in timed relation with the weaving operation.

On the inner end of the cross-head 6, there is arranged preferably a leaf spring member 17 with the free end resting on the periphery of the feed roll 12 with which it cooperates for the purpose of preventing the tape T from accidentally wrapping around this roll in case for some reason there is slack in the tape which member is extremely important.

At the lower portion of the auxiliary frame 3, there is pivotally attached thereto, as at 18, the lower end of a substantially U-shaped, upwardly extending second auxiliary frame 19 having an upper yoke-like portion so as to provide a pair of spaced-apart parallel arms 20. Between these arms 20, intermediate the length thereof, there is arranged another guide roll 21 which is journalled thereto, as at 22, and which is positioned directly opposite the feed roll 8 with which it cooperates. At one end of this guide roll 21, there is arranged gear teeth 23 which mesh with corresponding gear teeth 33 at the end of the feed roll 8.

The peripheral surfaces of both of the feed rolls 8 and 12 are preferably knurled or otherwise roughened so as to provide a non-slip surface for the tapes which are fed thereby.

Between the upper ends of the arms 20, there is arranged a take-up roll 24 which is rotatably arranged therebetween on a shaft 25, carried by these arms. Also between these arms 20 forwardly of the roll 24 there is arranged preferably another leaf spring member 26 having its free outer end resting on the periphery of the feed roll 8 with which it cooperates for the purpose of preventing the tape T' from accidentally wrapping around this roll in case for some reason there is slack in the tape.

Directly opposite this take-up roll 24, there is arranged on a bracket 27 projecting outwardly from the front wall L of the loom, a second take-up roll 28 which is rotatably arranged on a shaft 29 carried by this bracket.

There is provided preferably a tension coil spring 30 arranged to one side of the auxiliary frames 3 and 19 having one end thereof attached to the second auxiliary frame 19, as at 31, and the opposite end attached to the front wall L of the loom, as at 32. It is the purpose of this spring to maintain normally the auxiliary frames 3 and 19 in substantially a vertical position, as shown in FIG. 1, so that the periphery of the cooperating rolls 8, 21 and 7, 12 are respectively in tangential contact with each other and so that the gear teeth 15, 16–9, 10, and 23, 33 of the respective rolls are intermeshed, as more clearly shown in FIG. 4 of the drawings. It will be seen that the respective rolls may be moved away from one another so as to provide sufficient clearance to thread the respective tapes T and T' over and around the rolls merely by moving the auxiliary frames 3 and 19, together with the respective rolls carried thereby, outwardly or to

the left about the respective pivotal connections 4 and 18, as shown in the broken lines of FIG. 1.

It will be understood that the take-up mechanism of the present invention is to be used wherein two tapes are woven simultaneously one above the other which now is conventional practice in some types of needle or shuttleless looms. With use of the take-up mechanism of my invention, as more clearly shown in FIG. 1 of the drawings, it will be seen that one of the tapes T as it is delivered from the loom passes over the roll 24, down partially around the feed roll 8, and over the guide roll 21, and that the other tape T' positioned therebelow passes over the roll 28, down and partially around the feed roll 12 and over the guide roll 7.

As a result of my invention it will be seen that there is provided take-up mechanism which will deliver two tapes from a loom at identical rates of speed which is one of the most important aspects of the present invention. It will also be seen that my improved take-up mechanism consists of a minimum number of parts which can be easily fabricated and assembled and conveniently incorporated with existing looms.

While I have shown and described an embodiment which my invention may assume in practice, it will be understood that this embodiment is merely for the purpose of illustration and description, and that other forms may be devised within the scope of my invention as defined in the appended claims.

What I claim as my invention is:

1. Take-up mechanism for a loom comprising,
a driven feed roll rotatably mounted at the delivery end of the loom,
a guide roll rotatably mounted at the delivery end so as to be movable toward and away from said driven roll with which it cooperates,
a second feed roll rotatably mounted at the delivery end of the loom,
a second guide roll rotatably mounted at the delivery end so as to be movable toward and away from said second feed roll with which it cooperates,
means for maintaining normally the first guide roll in tangential contact with the driven feed roll and the second guide roll in tangential contact with the second feed roll,
a first take-up roll rotatably mounted at the delivery end of the loom in position to receive a loop of a first tape from the loom before the tape passes to said first driven feed roll,
a second take-up roll rotatably mounted at the delivery end directly opposite said first take-up roll and in tandem therewith and in position to receive a loop of a second tape from the loom before the tape passes to said second feed roll, and
means for driving said driven feed roll.

2. Take-up mechanism for a loom, as defined in claim 1, including a gear arranged with each of said feed rolls and their respective guide rolls which are intermeshed successively one to another in the manner of a gear train.

3. Take-up mechanism for a loom, as defined in claim 1, including means mounted opposite the periphery of each of the feed rolls for preventing the tape from accidentally wrapping therearound.

4. Take-up mechanism for a loom comprising,
a driven feed roll rotatably mounted at the delivery end of the loom,
a first supporting means mounted at the delivery end of the loom,
a guide roll rotatably mounted on said supporting means so as to be movable toward and away from said driven roll with which it cooperates,

a second feed roll rotatably mounted on said supporting means,
a second supporting means arranged adjacent said first supporting means,
a second guide roll rotatably mounted on said second supporting means so as to be movable toward and away from said second feed roll with which it cooperates,
means for maintaining normally the respective rolls in contact with one another,
a first take-up roll rotatably mounted at the delivery end of the loom in position to receive a loop of a first tape from the loom before the tape reaches said first driven feed roll,
a second take-up roll rotatably mounted on the second supporting means directly opposite said first take-up roll and in tandem therewith and in position to receive a loop of a second tape from the loom before the tape reaches said second feed roll, and
means for driving said rolls.

5. Take-up mechanism for a loom, as defined in claim 4, including meshed gears arranged with each of said feed rolls and their respective guide rolls.

6. Take-up mechanism for a loom, as defined in claim 4, including means arranged with each of the feed rolls for preventing the tape from accidentally wrapping therearound.

7. Take-up mechanism for a loom comprising,
a driven feed roll rotatably mounted at the delivery end of the loom,
a first auxiliary frame rockably mounted at the delivery end of the loom,
a guide roll rotatably mounted on said frame, and movable therewith toward and away from said driven roll with which it cooperates,
a second feed roll rotatably mounted on said frame,
a second auxiliary frame rockably mounted on said first auxiliary frame,
a second guide roll rotatably mounted on said second auxiliary frame and movable therewith toward and away from said second feed roll with which it cooperates,
means for maintaining normally the respective rolls in contact with one another,
a first take-up roll rotatably mounted at the delivery end of the loom in position to receive a loop of a first tape from the loom before the tape reaches said first driven feed roll,
a second take-up roll rotatably mounted on the second auxiliary member directly opposite said first take-up roll and in tandem therewith and in position to receive a loop of tape from the loom before the tape reaches said second feed roll, and
means for driving said rolls.

8. Take-up mechanism for a loom, as defined in claim 7, including meshed gears arranged with each of said feed rolls and their respective guide rolls.

9. Take-up mechanism for a loom, as defined in claim 7, including means arranged with each of the feed rolls for preventing the tape from accidentally wrapping therearound.

References Cited by the Examiner

UNITED STATES PATENTS

917,435	4/09	Holmes et al.	139—304
2,068,534	1/37	Costello	139—304
2,497,077	2/50	Firing et al.	139—124.1

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