

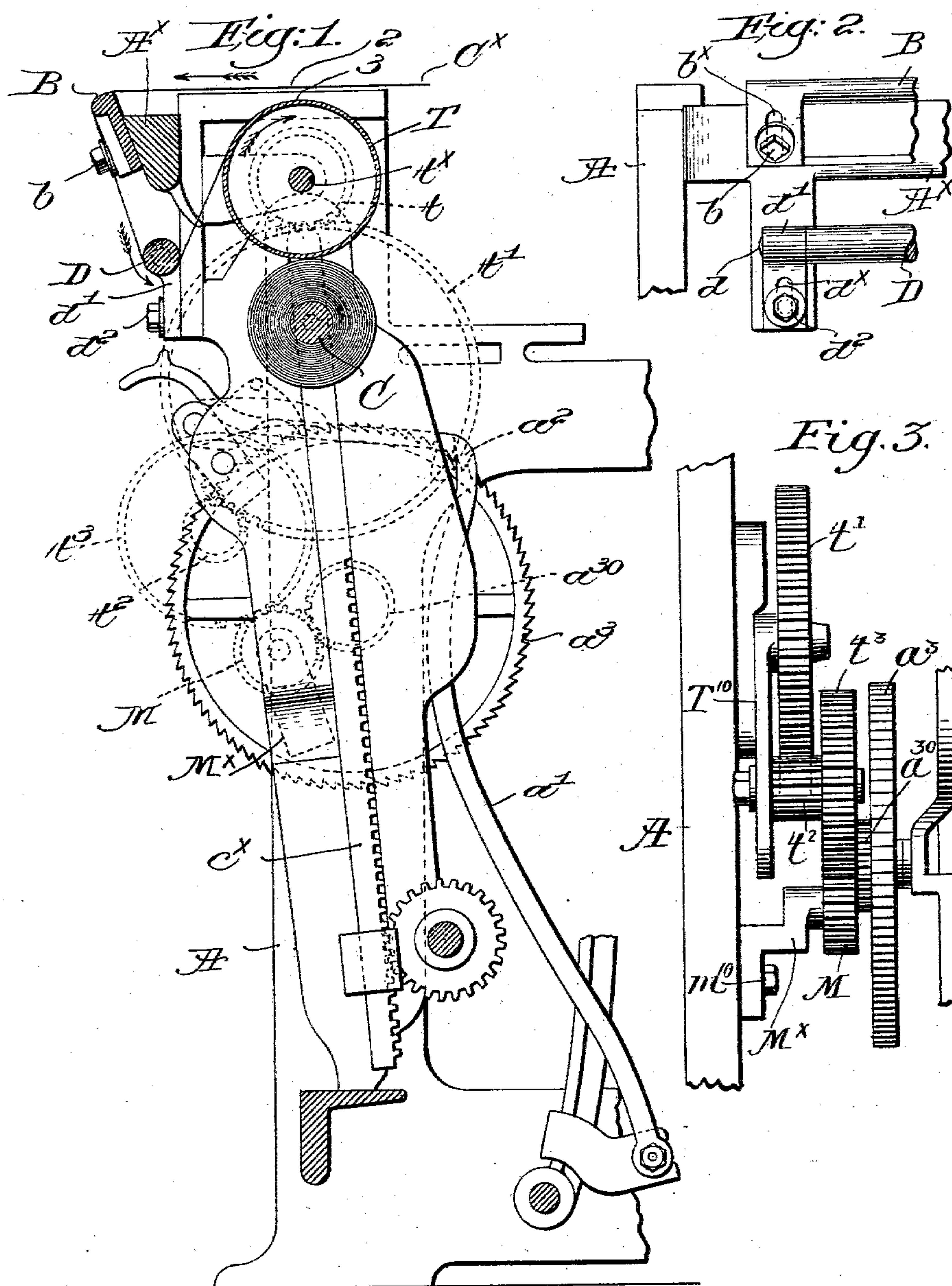
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W. I. STIMPSON.
TAKE-UP MECHANISM FOR LOOMS.

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NO MODEL.



Witnesses,
Edward F. Allen.
J. Wm. Lutton.

In witness whereof,
Wallace I. Stimpson,
by Mosby Gregory,
att'y.

UNITED STATES PATENT OFFICE.

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TAKE-UP MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 743,584, dated November 10, 1903.

Application filed March 6, 1903. Serial No. 146,441. (No model.)

To all whom it may concern:

Be it known that I, WALLACE I. STIMPSON, a citizen of the United States, and a resident of Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Take-Up Mechanism for Looms, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention has for its object the production of a novel take-up mechanism for looms wherein are combined the advantages of the "high-roll" and "low-roll" types of take-up mechanisms, as they are technically termed. In the former type the take-up or "sand" roll is so located that the cloth passes thereover direct from the fell and thence to the cloth roll or bar, upon which it is wound, such an apparatus being shown in United States Patent No. 643,284. In the low-roll type the take-up roll is located lower down in the loom, the cloth passing therefrom to the cloth-roll in a different manner, and there is a considerable demand for the low-roll take-up on the ground that for certain kinds of goods it is better in order to produce softer cloth and also to vary the "face" thereof to have a greater length of cloth between the fell and the cloth-roll than is now permissible in the high-roll type. The reason why the greater length of cloth is sometimes desired and the way in which softer cloth is thereby produced is as follows, so far as I am able to explain it: The fell of the cloth normally is slightly nearer the back of the loom than the point to which the reed beats it up, and except on the beat-up the warp and the made cloth up to the point where the latter is held by the take-up or sand roll are under tension. There is a certain amount of elasticity before the beat-up in the warp and the made cloth, and manifestly there is much more elasticity from the fell to the take-up roll when the length of cloth therebetween is greater, and this appears to act in two ways. In the first place, when such length of the cloth is short, as in the high-roll type of take-up, there may not be sufficient elasticity to

wholly take up the small movement which is given to the fell by the reed, so that the warp-threads from the fell to the front of the loom will be slack at the time of beating up, and this tends to make uneven cloth. When there is an extra or additional length of cloth, as in the low-roll arrangement, with an additional amount of elasticity, this slackness will be taken up. Again, the take-up roll takes up the cloth by means of small points scattered all over its surface, and the nearer the take-up roll to the fell of the cloth the more will the particular warp-threads near these points be tightened, while the threads in between such points on the roll will be under less tension. This has a tendency to make what is known as "reedy" cloth, having lengthwise streaks in it. Manifestly the greater the distance between the fell of the cloth and the take-up roll the less will be the difference between the tension of the particular warp-threads referred to and the tension of the intermediate threads, and the cloth throughout its width is subjected to practically uniform tension. If then a certain kind of warp or filling or certain weaves produces improper or faulty cloth when the high-roll take-up is used, a change to the low-roll, for which I have herein provided, will change the conditions in the manner just specified, and the faulty appearance of the cloth disappears. On the other hand, the change from low roll to high roll will in some cases obviate certain characteristics which are not desired in the particular cloth being woven. My present invention, while retaining the advantageous features of this latter type and its general construction, provides for the greater length of cloth between the fell and the cloth-roll, and by a simple change in the gearing the apparatus may be run as a high-roll take-up, if desired.

The various novel features of my invention will be fully described in the subjoined specification, and particularly pointed out in the claims.

Figure 1 is a transverse sectional view of a sufficient portion of a take-up mechanism to be understood embodying one form of my invention. Fig. 2 is a front elevation of a

portion of the apparatus shown in Fig. 1. Fig. 3 is a front detail view of the train of gearing shown in Fig. 1.

The loom side A, take-up pawl a^2 , the pawl-carrier a' , ratchet a^3 , with which the pawl coöperates, the cloth roll or bar C, having its journals rotatably mounted in downwardly-movable supports c^x , Fig. 1, and the take-up or sand roll T, mounted above the cloth-roll, may be and are substantially as in the patent referred to. As is shown in said patent, a pinion t on the take-up-roll shaft t^x meshes with a large gear t' , which in turn meshes with the pinion t^2 of a change-gear t^3 , the latter being mounted on a movable plate T^{10} , (see Fig. 3,) as is now customary, and the ratchet a^3 has an attached pinion a^{30} ; but as the direction of rotation of the take-up roll T is reversed in my present invention an intermediate small gear M is interposed between the pinion a^{30} and change-gear t^3 , the gears and pinions in Fig. 1 being for the most part indicated by dotted circles and being shown in front elevation in Fig. 3. The small gear M is mounted on a bracket M^x , Figs. 1 and 3, detachably secured to the loom side by a bolt m^{10} , Fig. 3. A breast-beam B, having elongated upright slats b^x , Fig. 2, is secured to the cross-girth A^x by bolts b , extended through the slots b^x into the cross-girth, providing for vertical adjustment and leveling of the beam to obviate any tendency of the cloth to work toward either side of the loom.

The cloth C^x is led from the fell over the rounded upper edge of the breast-beam and down around and under a "distance-roll" D, as it may be termed, located below the breast-beam and in front of the take-up roll, said distance-roll having its journals d rotatably mounted in bearings d' , adjustably secured to the loom-frame. Such adjustment is effected by bolts d^2 , extended through upright elongated slots d^x in the feet of the bearings d' and passing thence into the loom-frame, (see Fig. 2,) the roll D being thereby leveled or adjusted vertically, as may be necessary. From beneath the distance-roll the cloth passes up and over the take-up roll T, around its rear side, and down to the cloth roll or bar C, upon which it is wound. By this arrangement an increased length of cloth between the fell and the cloth-roll is obtained substantially equal to the length of cloth from substantially the point 2 to the point 3 in Fig. 1, as manifestly in the usual high-roll take-

up mechanism the cloth passes from the fell to the take-up roll at about the point 3 and passes thence around its front semicircumference to the cloth-roll.

Should it be desired to change the apparatus shown to a high-roll take-up of substantially the type shown in the patent referred to, the intermediate M is removed, the change-gear t^3 moved into mesh with the pinion a^{30} , thus reversing the direction of rotation of the take-up roll, and the cloth is led to the latter and around it directly from the fell. I thus obtain the advantages of both types of take-up mechanism in a simple and efficient manner and can readily change the mechanism from one to the other type.

The breast beam or support B and the distance-roll provide for and sustain a practically triangular bight or loop of the cloth between the fell and the take-up roll to furnish the added length of cloth between the latter two points.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In take-up mechanism for looms, a take-up roll, a cloth-roll upon which the cloth is wound, and adjustable means to form and sustain a loop in the cloth between the fell and the take-up roll, to increase the length of the cloth therebetween.

2. In take-up mechanism for looms, a take-up roll, means to rotate it in either direction, a cloth-roll upon which the cloth is wound, and means located in front of the take-up roll to sustain and form a substantially triangular loop in the cloth between the fell and take-up roll when the latter is rotated toward the back of the loom.

3. In take-up mechanism for looms, a take-up roll, a cloth-roll upon which the cloth is wound, and means, comprising a breast-beam vertically adjustable at its ends, and a vertically-adjustable distance-roll below it, to form and sustain a loop in the cloth between the fell and the take-up roll, adjustment of the beam preventing lateral movement of the cloth to one or the other side of the loom.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WALLACE I. STIMPSON.

Witnesses:

GEORGE OTIS DRAPER,
ERNEST WARREN WOOD.