

H. BARDSLEY.

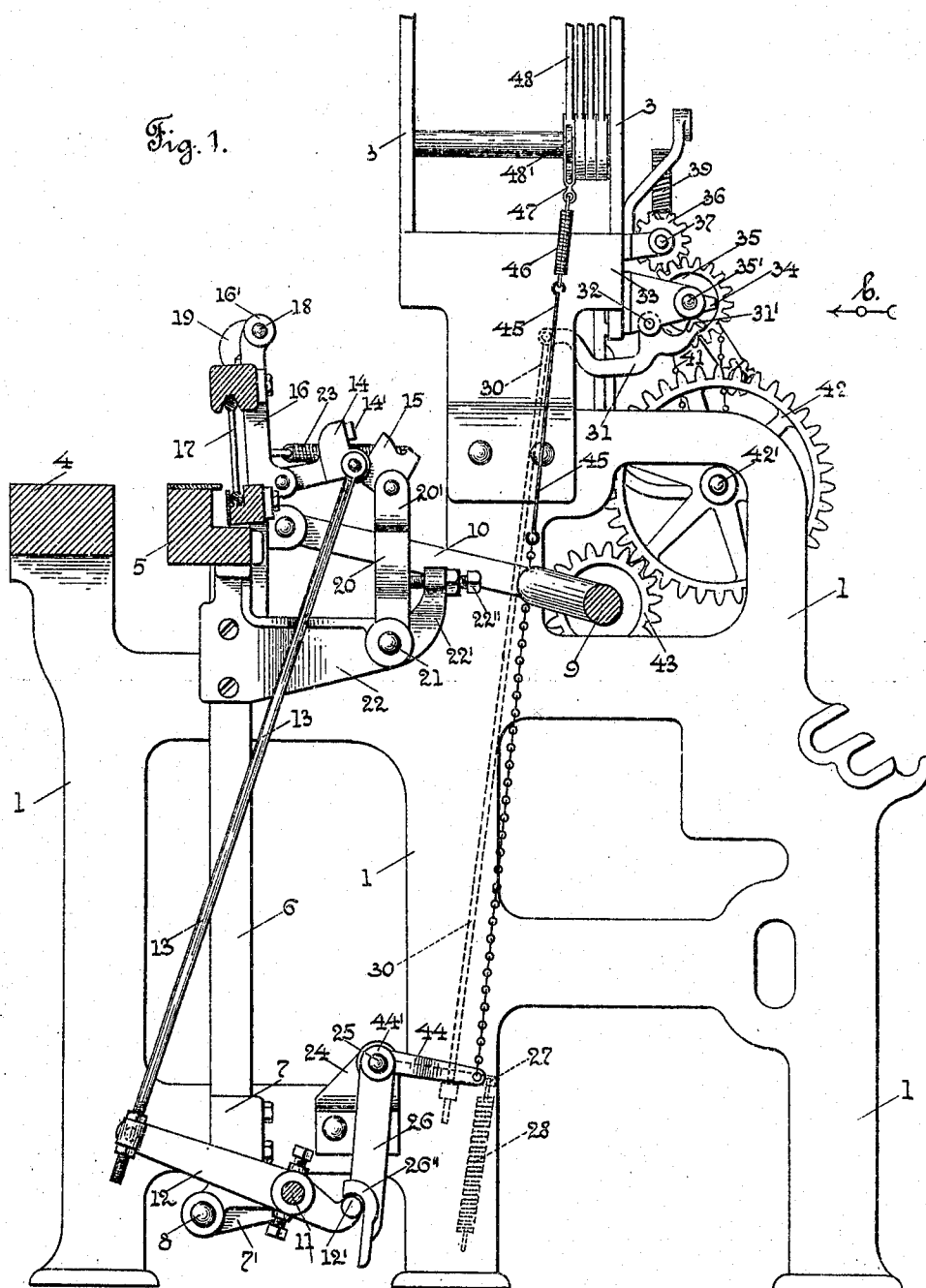
TERRY LOOM.

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937,139.

Patented Oct. 19, 1909.

2 SHEETS—SHEET 1.



Witnesses

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# UNITED STATES PATENT OFFICE.

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## TERRY-LOOM.

937,139.

Specification of Letters Patent.

Patented Oct. 19, 1909.

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*To all whom it may concern:*

Be it known that I, HENRY BARDSLEY, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Terry-Looms, of which the following is a specification.

My invention relates to looms, and to that class of looms which are used for weaving Turkish towels, or similar terry goods, so-termed, and my invention more particularly relates to the terry motion, so-termed.

The object of my invention is to improve upon the ordinary construction of a terry motion, and to provide an improved mechanism for operating the swinging reed of the terry motion, said mechanism preferably operated by a cam connected with the dobby driving mechanism.

My invention consists in certain novel features of construction of my improvements as will be hereinafter fully described.

I have only shown in the drawings a detached portion of a loom of the class referred to, with my improvements combined therewith, sufficient to enable those skilled in the art to understand the construction and operation thereof.

Referring to the drawing:—Figure 1 is a transverse cross section through a loom, looking in the direction of arrow *a*, Fig. 2. Fig. 2 is a rear view of the parts shown in Fig. 1, looking in the direction of arrow *b*, same figure, and, Fig. 3 shows the reed operating mechanism shown at the left in Fig. 1, detached, and in a different position.

In the accompanying drawings, 1 is the loom side or end frame; 2 is the dobby frame stand, 3 a detached portion of the dobby frame.

4 is the breast beam, 5 the lay, 6 the lay-sword, 7 the lay-sword-foot or end, pivotally mounted on a stud 8; 9 is the crank shaft, and 10 the crank connector to the lay.

On the extension 7' of the lay-sword 7 is mounted, in suitable bearings, a rock shaft 11, which extends transversely through the loom to the other end thereof. The rock shaft 11 has fast on each end thereof a rocking lever 12, (only one lever 12 is shown in the drawings). The front end of the lever 12 is adjustably connected with the lower end of a rod or connector 13. The

upper end of the rod or connector 13 is pivotally connected to the center of a link motion, comprising the two parts 14 and 15 hinged together. The part 14 has a stop or bumper 14', preferably of yielding material, and is pivoted on the lower end of an arm or plate 16, which is secured to the end of the swinging reed 17, see Fig. 2. The upper end of the arm or plate 16 has a hub 16' thereon, which is pivotally mounted on a pin or stud 18, on the upper end of an arm 19 secured to the upper end of the lay-sword, see Fig. 2. The other part 15 of the link motion is pivotally mounted in the upper forked end 20' of the arm 20, which is loosely mounted at its lower end on a stud 21 on a stand or bracket 22, which is secured to and moves with the lay-sword.

An adjusting screw 22'' is mounted in the upwardly extending projection 22' on the stand 22, and is adapted to engage the edge of the arm 20, to regulate the position of said arm, and the position of the lower edge of the reed 17, relatively to the lay. A helically coiled tension spring 23, attached at one end to the part 15 of the link motion, and at its other end to the arm or plate 16, acts to return the link motion to its closed position, and yieldingly hold it in this position, as shown in Fig. 3.

Upon the inner side of the loom frame is secured a stand 24, see Fig. 1, which has bearings thereon for a rock shaft 25. On the inner end of the shaft 25 is fast, in this instance the hub 26', see Fig. 2, of an arm 26 which has a hook end 26''. The lower end of the hook arm 26 is adapted to be moved into the path of and engage the rounded end 12' on the rocking lever 12. The extension 12' is only on one end of the loom. On the other end of the shaft 25, and outside of the end frame 1, see Fig. 2, is fast the hub 27' of an arm 27, shown by broken lines in Fig. 1. A helically coiled tension spring 28 is attached at one end to said arm 27, and at its other end to a pin 29, or some stationary part of the loom frame 1, and acts to rock the shaft 25, and move the arm 27 downwardly, and the hook arm 26 toward the front of the loom, as shown in Fig. 1.

The arm or lever 27 is connected by a rod or connector 30 with a lever 31, which in this instance is pivotally mounted on a stud 32 on a stand 33 secured to the dobby frame,

and has an engaging end 31', see Fig. 1, which is adapted to extend in the path of and be engaged by a cam 34, which is connected with and operated by the dobby driving mechanism. In this instance the cam 34 is rotated through a pinion 35, which meshes with and drives a pinion 36, which operates a worm shaft 37, having a worm 38 thereon, meshing with and driving a worm gear 39 on the dobby pattern chain cylinder shaft 40, see Fig. 2. The pinion 35 is in this instance operated through a sprocket chain 41 engaging a sprocket wheel 41' on the shaft 35' of the pinion 35, and a sprocket wheel 41'' on the shaft 42' of the gear 42, which gear meshes with and is driven by the pinion 43 on the crank shaft 9, see Fig. 2.

On the shaft 25 in this instance alongside the hub 26' of the hook arm 26, is fast the hub 44' of an arm 44, see Fig. 2. The arm 44 is bent outwardly, and the end thereof is connected through a chain or flexible connection 45' to the lower end of a wire 45. The upper end of the wire 45 is connected in this instance to a helically coiled tension spring 46 having a link 47 attached to the upper end thereof, which engages a hook extension 48' on a dobby lever or jack 48, see Fig. 2. The movement of the dobby lever 48, through the connection to the arm 44 fast on the rock shaft 25, rotates said rock shaft 25, and causes the hook arm 26 to be held away from the engaging end 12' of the rocking lever 12, when the loom is weaving a plain weave or heading between the towels, or other fabric.

One feature of my improvements is the operation of the terry motion from a cam which is connected with the dobby driving mechanism, and operated by the dobby driving mechanism.

Another feature of my improvements is the construction of the link motion connected with the swinging-reed, and the mechanism for operating said link motion, and still another feature of my improvements is the combination with the swinging arm forming a part of the link motion, of an adjusting screw at each end of the lay, by means of which the two ends of the swinging-reed may be adjusted exactly alike.

The operation of my improvements in terry motion will be readily understood by those skilled in the art, from the above description in connection with the drawings:— In producing terry towels, or other fabrics with loops or pile on their surface by means of my terry motion, the lever 31, Fig. 1, operated by the rotary cam 34, will, through connector 30, arm 27, and rock shaft 25, allow the hook arm 26, through spring 28, to be moved with its hooked end 26' into engagement with the extension 12' on the lever 12, so that the two parts 14 and 15 of the link motion will be broken or

moved apart, see Fig. 1, to cause the reed at its lower part to move inwardly, and to be retained in its rearward position as the lay beats up for three picks. But every third pick in this instance, the extension 34 on the rotary cam, will move lever 31, and through connector 30, and arm 27, rock the shaft 25, and move the hook arm 26 out of engagement with the extension 12' on the rocking lever 12, to allow the spring 23 to act, to draw the two parts 14 and 15 of the link motion together, and into alinement to cause the lower part of the reed 17 to move forwardly, and in beating up in the usual way, to form the loops, (see Fig. 3.)

It will be understood that the details of construction of my improvements may be varied if desired, and they may be adapted to be used on any looms of the class referred to, of usual and well known construction.

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

1. In a loom of the class described, the combination with a swinging reed, of means to cause the movement of said reed to form loops in the warp, said means including two connections, one to a continuous rotating cam, and the other to a device under the control of pattern surfaces.

2. In a loom of the class described, the combination with a swinging reed, of a rotating cam on a shaft of the dobby mechanism, and connections intermediate said cam and said swinging reed, and a connection from the dobby to said swinging reed, said connections under the control of the pattern surfaces of the dobby.

3. In a terry motion of a loom, the combination with a swinging-reed, a link motion connected therewith, and comprising two parts hinged together, and adapted to be opened and closed, a connector from said link motion to a rocking lever, and said rocking lever, of a hook lever to engage said rocking lever, and means to move said hook lever into and out of the path of said rocking lever, and means to hold it out of the path of said lever.

4. In a loom, the combination with a swinging-reed, and a link motion, comprising two parts pivotally attached together, and one part pivotally attached to the swinging-reed, and the other part to an arm or lever pivotally mounted on a stand secured to and moving with the lay, of said stand, one at each end of the lay, and means for adjusting the position of said pivotally mounted arm or lever, to regulate the position of the two ends of the reed at its lower part.

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Witnesses:

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