

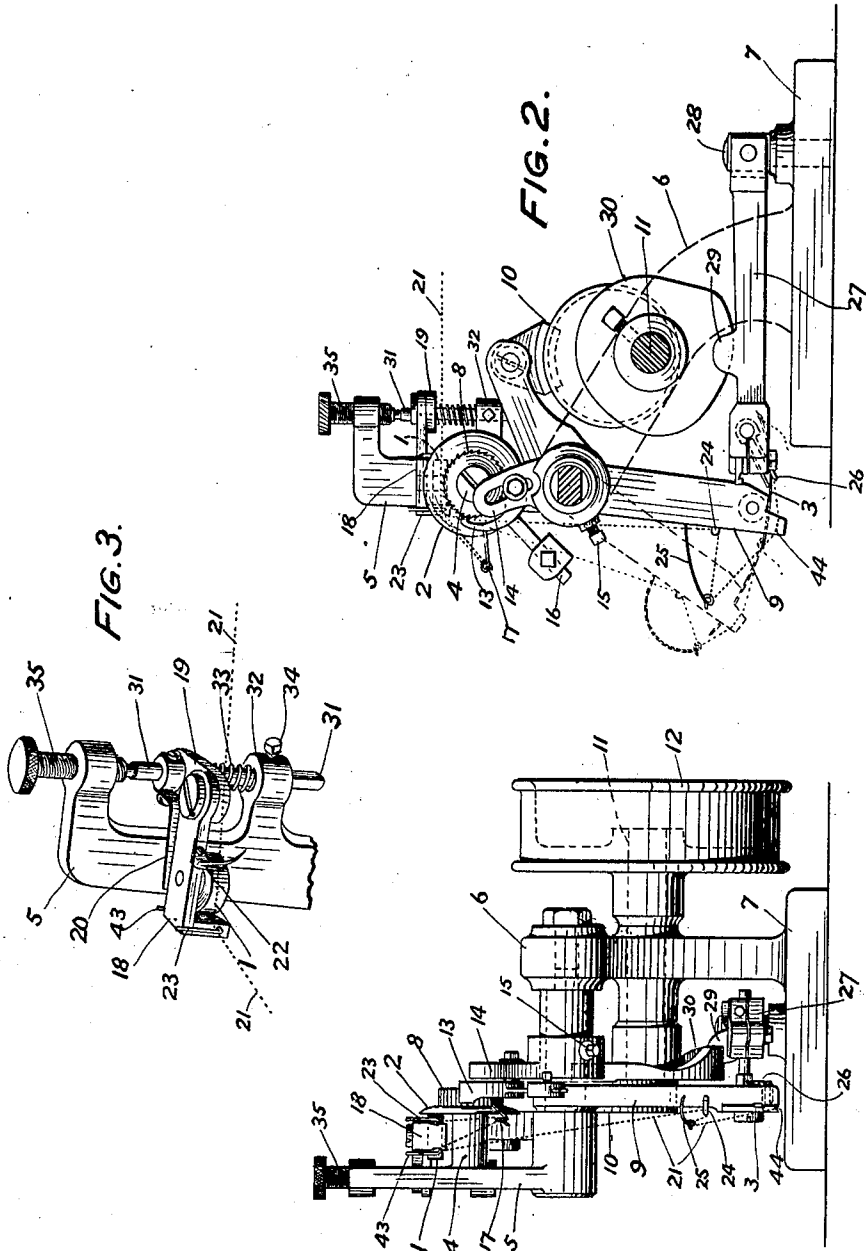
No. 892,007.

PATENTED JUNE 30, 1908.

W. PAYNE.

THREAD SLACKENING DEVICE FOR LOOPING MACHINES.

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WITNESSES:

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FIG. 1.

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THREAD-SLACKENING DEVICE FOR LOOPING-MACHINES.

No. 892,007.

Specification of Letters Patent.

Patented June 30, 1908.

Application filed February 7, 1908. Serial No. 414,710.

To all whom it may concern:

Be it known that I, WILLIAM PAYNE, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Thread-Slackening Device for Looping-Machines, of which the following is a specification.

Objects of the present invention are to provide for making an elastic seam on a looping machine; to positively feed the thread to the needle so as to make loose stitches; to provide for adjusting with the necessary degree of accuracy the length of thread thus fed at the making of each stitch; and to automatically stop the feed of thread when the machine is running but is not supplied with work.

The invention will be finally claimed but will first be described in connection with the embodiment of it selected for illustration in the accompanying drawings in which

Figure 1, is a front view of so much of a looping machine as is necessary in order to show mechanism embodying the invention in application thereto. Fig. 2, is a side view of the apparatus shown in Fig. 1, with the pulley removed, and Fig. 3, is a perspective view showing parts that are located at the back in Fig. 2.

In the drawings 1 and 2, are rotatable parts between which the thread passes on its way to the needle 3. By varying the effective diameter of these parts it is possible to adjust with the necessary degree of accuracy the length of thread fed to the needle at each stitch. As shown the part 2, comprises a disk rotatably mounted on a stud 4, carried by a bracket 5, which is secured to a stud projecting from the arm 6, fast to the frame 7, of the machine. The part 2, is provided or connected with a ratchet wheel 8. The needle arm 9, oscillates upon the stud projecting from the arm 6, being in the present instance operated by the cam and follower 10, on the main shaft 11, which is driven by the pulley 12. To the needle arm 9, or to a part connected therewith, is pivotally attached a pawl 13, which engages the ratchet wheel 8, and thus imparts an intermittent motion to it and to the disk 2, at each oscillation of the needle. As shown there is an arm 14, provided with a hub mounted on the hub of the needle frame and provided with a set screw 15, by means of which the arm 14, can be adjusted and clamped to place on the hub of the needle arm. Furthermore this

construction permits of the application of the attachments which embody the invention to an existing type of looping machine. The arm 14, is slotted and the pivot of the pawl 13, is adjustably arranged in the slot of the arm so as to afford an adjustment. The pawl or ratchet 13, is provided with a weighted arm 16, which tends to turn it out of engagement with the ratchet wheel. The pawl is also provided with an arm 17, having at its end a thread eye. There is an arm 18, to which the roller 1, is journaled and this arm is pivoted to a head 19, which is adjustable in the bracket 5. Interposed between the head 19, and the arm 18, is a spring 20, which serves to hold the periphery of the roller 1, up against the face of the disk 2. The thread 21, is led from a source of supply which does not include a tension device, through an eye 22, on the arm 18, then between the abutting faces of the parts 1 and 2, then through a thread guide 23, at the end of the arm 18, then through the eye of the arm 17, then through another guide 43 on the end of the arm 18, then through an eye 24 on the needle arm 9, then through an eye in the end of a spring 25, secured to the needle arm, then through a guide 44, at the end of the needle arm and thence through the eye of the needle.

26, is stitch forming mechanism connected with an arm 27, pivotally connected with a turnable stud 28, mounted in the framework. The arm 27, is provided with a follower 29, which coöperates with a cam 30, on the shaft 11.

When the machine is sewing on work, the thread acting upon the arm 17, holds the pawl 13, up to its work but when the machine is not operating on work, this pawl falls clear of its ratchet wheel. In consequence of this when the machine is doing work, the pawl turns the parts 1 and 2, and thus feeds positively a length of thread and this feed takes place when the needle is going away from the work so that the stitches are not drawn and a loose seam is produced and such a loose seam is obviously desirable where the parts of knit goods are looped together because in such cases the loose stitch seam is practically as elastic as the knitted web. To adjust the length in each stitch the roller 1, is adjusted radially in respect to the face of the disk 2. For this purpose the rod 31, which carries the head 19, is adjustable through its support 32. A spring 33, tends to shift the rod 31, when

the set screw 34, is released but the adjusting screw 35, affords means for accurately positioning the rod 31, whereupon it is clamped to place by the set screw 34. Of course the amount of thread may also be adjusted by changing the throw of the pawl 13, but this is not as accurate an adjustment as has been just described.

What I claim is:

10 1. A stitch-slackening device for looping machines comprising a pair of rotatable parts run between which the thread passes and which run in contact with each other guides for directing the thread between said parts, means for adjusting the surfaces of said parts which contact with the thread to vary the feed thereof, and mechanism for driving said parts, substantially as described.

20 2. The combination in a looping machine of a needle and means including rolls for intermittently pulling forward and feeding the thread to the needle to make a loose seam, substantially as described.

25 3. The combination with a looping machine of a pair of revoluble parts by which the thread is fed, needle actuating mechanism, and a pawl-and-ratchet wheel interposed between one of said revoluble parts and the needle actuating mechanism, substantially as described.

30 4. The combination of a disk having a ratchet wheel, a roller arranged to run on the face of the disk, a pawl adapted to drive the ratchet wheel and provided with a thread guide, and means for directing a thread be-

tween the disk and roller and through said guide whereby the operation of the pawl is controlled by the thread, substantially as described.

5. The combination of a disk, a roller arranged to run on the face of the disk thread guiding devices for introducing a thread between the roller and disk, means for turning said parts to feed a thread between them, and devices for adjusting the roller in respect to the disk to change the rate of feed, substantially as described.

6. The combination of an intermittently rotatable disk, means for rotating it a head and arm carried by the head and provided with a roller which runs on the face of the disk, and an opposing screw and spring for supporting the head by means of which it is adjusted to shift the roller in respect to the face of the disk, substantially as described.

7. In combination a revoluble disk provided with a ratchet wheel, a thread controlled pawl for operating the ratchet wheel, sewing mechanism by which the pawl is operated, a head provided with a spring controlled arm having a roller which runs on the disk, and a screw for adjusting the head, substantially as described.

In testimony whereof I have hereunto signed my name in the presence of witnesses.

WILLIAM PAYNE.

Witnesses:

CLIFFORD K. CASSEL,
K. M. GILLIGAN.