

(No Model.)

W. F. KINTZING.
TAKE-UP MECHANISM FOR LOOMS.

No. 537,893.

Patented Apr. 23, 1895.

Fig. 1.

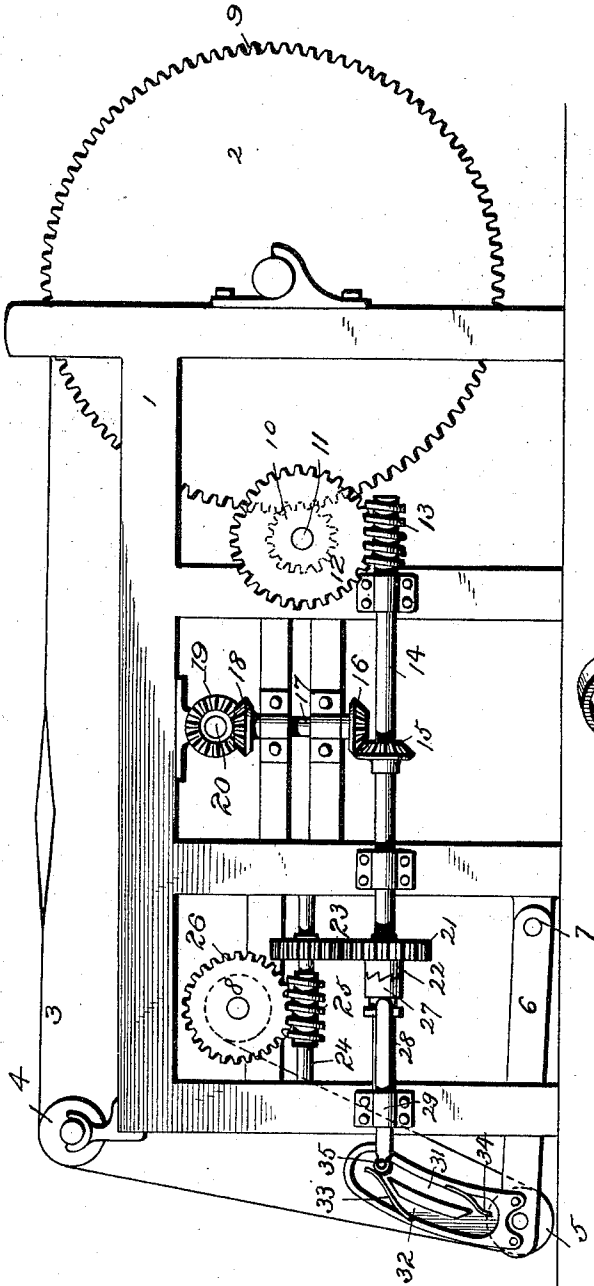
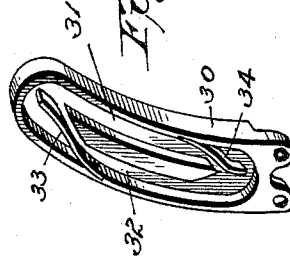


Fig. 2.



Witnesses
Alfred T. Page

Inventor
William F. Kintzing
by *H. B. Anderson*
Attorney

UNITED STATES PATENT OFFICE.

WILLIAM F. KINTZING, OF GLEN ROCK, PENNSYLVANIA.

TAKE-UP MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 537,893, dated April 23, 1895.

Application filed April 30, 1894. Serial No. 509,566. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. KINTZING, a citizen of the United States, residing at Glen Rock, in the county of York and State of Pennsylvania, have invented certain new and useful Improvements in Take-Up Mechanisms for Looms; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to let-off and take-up mechanism for looms, more particularly for looms for weaving wire cloth, and it has for its object to provide simplified means for maintaining an even tension on the wire cloth as it is woven and for automatically winding the cloth upon the winding drum as a given quantity of the cloth is formed as will be hereinafter more particularly described and then sought to be specifically defined by the claims, reference being had to the accompanying drawings, forming a part hereof, and in which—

Figure 1 is a side elevation of a wire cloth loom frame having my invention applied thereto. Fig. 2 is a perspective of the casting formed with the cam ways for automatically throwing a clutch into and out of engagement so as to automatically wind the cloth upon a cloth winding drum as a given quantity of cloth is formed and then automatically throwing the winding drum out of operation until another given quantity of cloth is formed.

In the drawings, the numeral 1 designates the loom frame, and 2 the warp reel or drum from which the wire 3 is fed, the warp wire passing through the heddles of the harness as customary in wire cloth looms, (which harness and heddles it is not necessary to illustrate as the same does not form a part of this invention and it is well known) and then over a guide roller 4 mounted in suitable bearings on the loom frame and from thence over a roller 5 mounted in one end of a swinging frame 6 which is suitably pivoted at its rear end as for instance at 7 so as to be free to rise and fall, the wire cloth passing from

the roller 5 up to the winding drum 8 journaled in suitable bearings on the loom frame. The warp drum 2 is provided with cog-teeth 9 with which mesh a spur wheel 10 mounted upon a shaft 11 supported in suitable bearings on the loom frame, which shaft also carries a worm wheel 12 with which engages a worm 13 on the shaft 14 mounted in suitable bearings which shaft also carries a beveled pinion 15 with which meshes a beveled pinion 16 on a shaft 17 mounted in suitable bearings. This shaft also carries a beveled pinion 18 with which meshes a beveled pinion 19 mounted upon a shaft 20 journaled in suitable bearings and deriving motion from a suitable part of the loom mechanism which it is not necessary to illustrate as the same is not novel so that motion will be transmitted through the several parts mentioned to the warp drum 2. The shaft 14 also carries a spur wheel 21 loosely mounted thereon and formed with a clutch hub 22, which spur-wheel meshes with another spur wheel 23 keyed to a shaft 24 so as to turn therewith which shaft also carries a worm 25 meshing with a worm wheel 26 carried by the shaft of the winding drum 8.

A clutch 27 is feathered to the shaft 14 so as to slide thereon and turn therewith and is operated automatically so that when a given quantity of cloth is formed and is to be wound upon the winding drum the clutch is thrown in to engagement with the hub of the loose spur wheel 21 thereby causing that wheel to turn and transmit motion to the spur wheel 23 and through the worm 25 and worm wheel 26 to the winding drum so as to wind thereon the cloth, said clutch being automatically thrown out of engagement with the hub 22 after the given quantity of cloth has been wound upon the winding drum so that said drum will remain stationary until the next given quantity of cloth is to be wound thereon. The clutch 27 is thrown into and out of engagement with the hub 22 by means of an arm 28 engaging said clutch and sliding in a suitable keeper 29, the outer end of said arm being actuated by a cam so formed that at the proper time it will throw the arm inward so as to cause the clutch to engage the hub of the loose spur wheel 21, and again at the proper time draw said arm outward so as

to disengage the clutch from said hub and thus throw the winding drum out of operation by the latter movement.

The construction which I have devised for
 5 reciprocating the clutch arm 28 consists of
 a casting 30 secured to the swinging frame 6
 and formed with cam ways 31 and 32 which
 have a curve corresponding to that described
 10 by the swinging frame 6 in its upward and
 downward movement, said cam ways being
 so formed that when the swinging frame 6
 has reached the limit of its downward move-
 15 ment and taken up the slack in the cloth that
 has been formed the upper portion of the cam
 way 32 will act on the end of the arm 28 so as
 to throw the arm 28 inwardly and cause the
 clutch 27 to engage the hub 22 and thus
 20 throw the winding drum into operation. This
 brings the end of the arm 28 to the cam way
 31 and as the winding drum turns so as to
 wind up the cloth the swinging frame 6 with
 the casting 30 is drawn upward until the
 25 lower end of the cam way 31 is brought to the
 end of the clutch arm 28 and forces the end
 of the arm 28 outwardly and into the cam way
 32 thus releasing the clutch and throwing
 the winding drum out of operation. The
 30 swinging frame 6 now commences its down-
 ward movement by gravity and carries with
 it the casting 30 and serves to take up the slack
 in the cloth as the same is formed until the
 swinging frame has reached the limit of its
 35 downward movement when the cam way 32
 throws the arm 28 inwardly as before thus
 causing the winding drum to again operate to
 wind thereon the cloth as before, and so the
 operation continues during the entire period
 40 of the operation of the machine. I prefer to
 form one wall of the cam way 32 at its upper
 end by a spring 33, and one wall of the cam
 way 31 at its lower end by a spring 34 so that
 said springs will exert an elastic pressure
 45 against the end of the clutch arm 28 at the op-
 posite ends of the two cam ways so that there
 will be a quick positive motion imparted to the
 clutch lever as it passes from one cam way to
 the other. I do not limit myself to this par-
 50 ticular construction as it is obvious that said
 walls may be rigid instead of elastic and in
 such event it will only be necessary to leave a
 space or way so that the ends of the clutch
 arm will pass freely and evenly from one cam
 55 way into the other, as is obvious to the ordi-
 nary mechanic. In order to reduce the fric-
 tion between the end of the clutch lever 28
 and the cam ways in the casting 30 I prefer
 to attach a friction roller to the end of the
 60 clutch lever, said roller being indicated by
 the numeral 35. The casting 30 with its cam
 ways constitute a very simple mechanism for
 actuating the clutch lever so as to throw the
 winding drum into and out of operation at
 the proper time. This not only reduces the
 65 cost of making the take up and let off mech-
 anism but also renders fewer parts necessary
 and correspondingly lessens the wear of the
 parts of the machine and prolongs the life

thereof, thus affording a very efficient and simple automatic take up.

I have described with particularity what I
 consider the best construction of the details
 of the several parts and their arrangement
 but it is obvious that various changes may
 be made therein without departing from the
 75 essential features of the invention. It is also
 obvious that the parts of the mechanism de-
 scribed may be duplicated so as to be the
 same on both sides of the loom frame if nec-
 essary or desirable, the same being obvious
 80 to the ordinary mechanic.

Having described my invention and set
 forth its merits, what I claim is—

1. The combination with the loom frame, of
 the winding drum, the shaft carrying a worm
 and provided with a spur wheel, the shaft
 85 having a spur wheel loosely mounted to ro-
 tate thereon and constantly engaging with
 the first mentioned spur wheel, a clutch for
 rendering said loosely mounted spur wheel
 alternately fast and loose, a swinging frame,
 90 and a casting carried by said frame and
 formed with cam ways 31, 32 acting on a por-
 tion of the clutch to throw the clutch into
 locking position with said loosely mounted
 spur wheel to transmit motion to the winding
 95 drum after a given quantity of cloth is formed
 and is to be wound upon said drum, and out
 of locking engagement therewith at other
 times, substantially as and for the purposes
 described. 100

2. The combination with the loom frame, a
 winding drum, and mechanism for actuating
 said drum, of a clutch and arm for throwing
 said mechanism into and out of operation, a
 swinging frame, and a casting carried by said
 105 frame, formed with cam ways acting on the
 clutch arm to move it alternately in opposite
 directions to throw the clutch into locking
 position during the upward movement of the
 swinging frame and out of locking position
 110 during the downward movement of said
 frame, substantially as and for the purposes
 described.

3. The combination with the loom frame, a
 winding drum, and mechanism for throwing
 115 said drum into and out of operation, of a
 clutch and arm for actuating said mechanism,
 a swinging frame actuated by the fabric
 being woven and carrying a casting formed
 with cam-ways to actuate the arm to throw
 120 the clutch into locking position on the up-
 ward movement of the swinging frame and
 out of locking position on the downward
 movement of said frame, said cam ways hav-
 ing springs to exert a pressure on the clutch
 125 arm as it passes from one cam way to the
 other, substantially as and for the purposes
 described.

In testimony whereof I affix my signature
 in presence of two witnesses.

WILLIAM F. KINTZING.

Witnesses:

CHAS. H. HEINDEL,
 ISRAEL AMSPACHER.