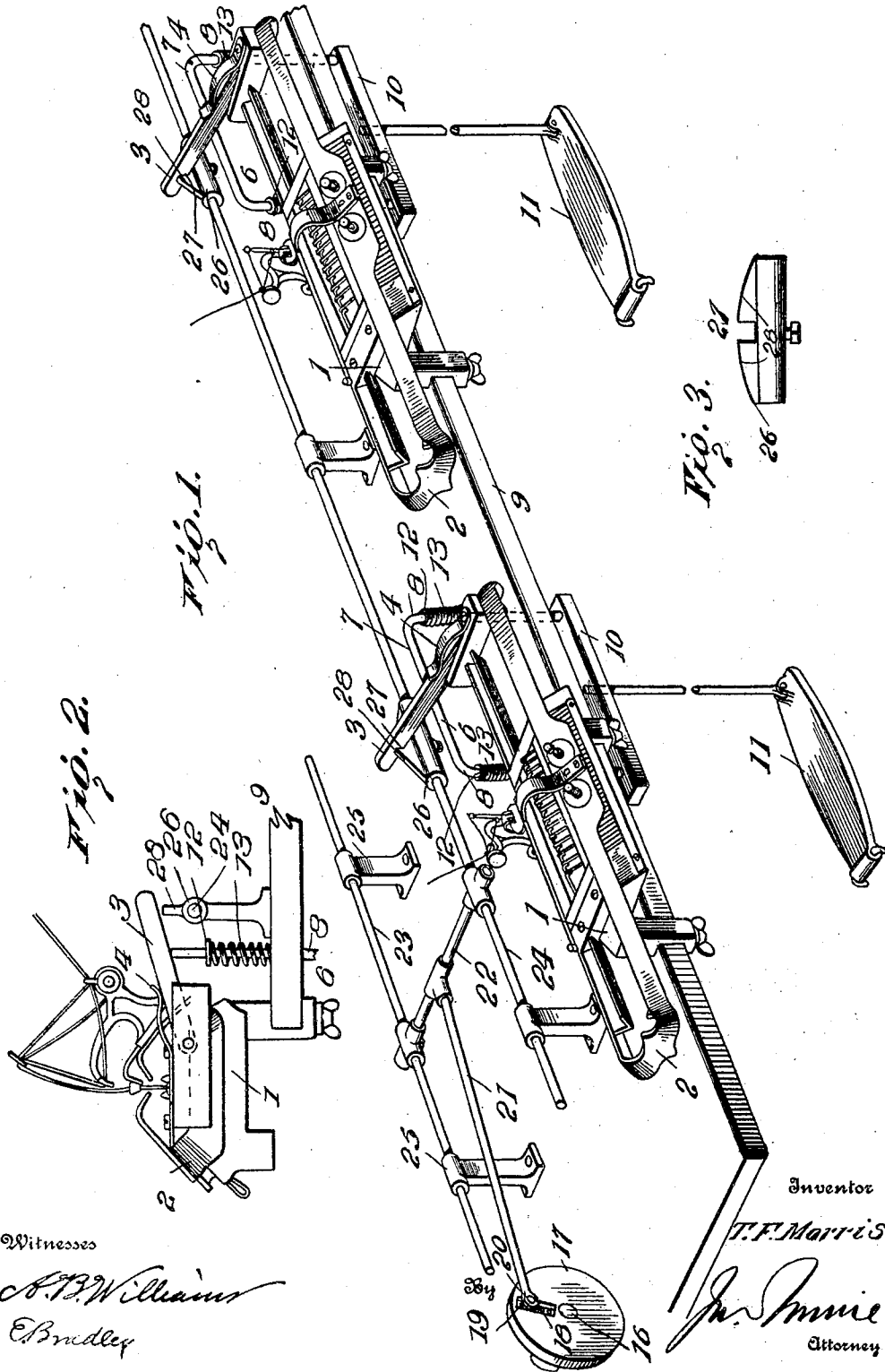


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T. F. MORRIS.
POWER MECHANISM FOR KNITTING MACHINES.
APPLICATION FILED OCT. 19, 1905.



Witnesses

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POWER MECHANISM FOR KNITTING-MACHINES.

No. 824,565.

Specification of Letters Patent.

Patented June 26, 1906.

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To all whom it may concern:

Be it known that I, THOMAS F. MORRIS, a citizen of the United States, residing at Waterford, in the county of Saratoga and State of New York, have invented new and useful Improvements in Power Mechanism for Knitting-Machines, of which the following is a specification.

This invention relates to improvements in power mechanism for knitting-machines.

In the manufacture of gloves it is customary to knit the fingers and thumbs separately after the body of the glove is made. To accomplish this operation, it is essential that the machine be under perfect control to stop and start it to knit a predetermined number of stitches; otherwise the finger or thumb formed would be either too short or too long.

With the machines known to me now in use the carriage is reciprocated by hand, which is slow and laborious, so much so that skilled operators soon tire. According to my present invention I employ a knitting-machine of well-known type and mount adjacent thereto a reciprocating shaft provided with a latch-holder engaged by a spring-actuated latch controlled by the operator to reciprocate the carriage and yet permit of the latter being thrown out of the field of the latch-holder to start the stitches between the body and finger, which is essential to accomplish high-grade work.

Other objects and advantages will be hereinafter referred to and will be particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view of my improvement, showing its application. Fig. 2 is an end elevation of the same. Fig. 3 is a detail view of the latch-holder.

The numeral 1 represents the bed, and 2 the carriage, of an ordinary reciprocating flat knitting-machine. As this machine forms no part of the present invention and is so well known in the art, a detail description of it is not deemed necessary, except to state that the carriage reciprocates back and forth on the bed when knitting.

Preferably on one end of the carriage is pivoted a latch 3, normally pressed down by a spring 4, and mounted directly under the latch and beyond the pivoted point of the latter is what I shall hereinafter refer to as a "disengaging device" 6, consisting of a frame having a cross-bar 7 and two legs 8, the latter

extending through a work-table 9 and connected at their lower ends by a bar 10, which is in turn connected with an operating-pedal 11. On each leg is a flange 12, and between said flanges and the table I interpose springs 13 for normally keeping the disengaging device elevated to raise the latch against the normal downward tension of its spring 4.

Mounted on the table is a power-shaft 16, driven by any well-known means and bearing at one end a crank-disk 17, formed with a slot 18, and a series of openings 19, in one of which is a crank-pin 20. Connected to the crank-pin is a link 21, pivotally connected at its opposite end to a cross-head 22, which is in turn connected to a guide-rod 23 and a reciprocating rod 24. These two rods are mounted in bearings 25 to insure an even and uniform reciprocation of the parts during the operation of knitting. The rod 25 carries an adjustably-mounted latch-holder 26, formed with a seat 27 and two oppositely-inclined surfaces 28 each side the seat. The bar 24 is situated relative to the latch 3, so that when the disengaging device is withdrawn the latch will ride up one of the inclined surfaces and be caught in the seat and impart to the carriage the necessary reciprocating movement.

In operation a number of machines will be operated by a single reciprocating rod, each machine being independent of the other in so far as the number of stitches formed is concerned, but the cams of all having a uniform length of reciprocation—that is to say, while the stroke of each rod 24 is regulated by the connection of the crank-wheel to throw the carriage the length of the greatest number of stitches to be made on a given machine the companion machines may have their needles adjusted so as to make half of that number. The operator of a particular machine pushes the carriage 2 toward the right to have ready and convenient access to the needles to apply the section or body portion of the garment to receive a knitted portion and also to throw the latch clear out of the field of reciprocation of the latch-holder, as shown in Fig. 2. The body portion is looped to the knitting-machine by the operator. The latter forces the carriage by hand toward the left, in the meantime depressing the disengaging device. As the carriage is moved and as the latch-holder is reciprocated toward it said latch will ride up the inclined surface and fall into

the seat 27 and the reciprocation of the rod is transferred to the carriage, and the knitting operation goes on.

It will be noted that the disengaging device is longer than the greatest throw of the carriage, and during the knitting operation the latch rides on the bar 7, so that the operator may disengage the power at any point in the reciprocation of the carriage.

My invention is extremely simple and durable, and to one familiar with the art its value to the trade will be readily appreciated. The knitting-machine is under perfect control, and if the operator desires to observe the condition of the stitches the power can be instantly disconnected and the carriage thrown to one side. Furthermore, in the use of this improvement I am enabled to dispense with the awkward and clumsy mechanism placed in the front of the machine now in use and at the same time multiply the output several times.

What I claim is—

1. In combination, a knitting-machine, power mechanism, a latch for connecting the power mechanism and the knitting mechanism, means for normally holding the latch in an inoperative position, and manually-operating means for operating the latch to connect the power mechanism and the knitting-machine, said operating means being manually held in position during the time the power mechanism and the knitting-machine are connected.

2. In combination, a knitting-machine having a carriage adapted to be reciprocated in a straight line, power mechanism including a constantly-reciprocating element operable in a given path, a latch for connecting the constantly-reciprocating element and the knitting-machine while the element is reciprocating in its given path, and a manually-controlled disengaging device for disengaging the reciprocating element from the knitting-machine, without altering the movement or the operative path of travel of said element.

3. In combination, a knitting-machine having a carriage adapted to be reciprocated in a straight line, power mechanism including a constantly-reciprocating element operable in a given path, a latch for connecting the constantly-reciprocating element and the knitting-machine while the element is reciprocating in its given path, and means for disengaging the latch to stop the knitting-machine.

4. In combination a knitting-machine, a power mechanism formed with opposite inclined surfaces and a seat between the same, a latch on the knitting-machine which engages one of the inclined surfaces and drops into the seat, and manually-operated means for disengaging the latch from the seat.

5. In combination, a knitting-machine, a

reciprocating power mechanism including a reciprocating element formed with a seat, a pivoted latch carried by the knitting-machine, said latch normally engaging the seat, and manually-operated means for disengaging the latch from the power mechanism.

6. In combination, a series of knitting-machines, a constantly-operated power mechanism, a latch between each knitting-machine and the power mechanism, means normally holding the latch of each knitting-machine in contact with the power mechanism, and manually-operated means for disengaging the latch from the power mechanism.

7. In combination, a knitting-machine, power mechanism including a reciprocating element having oppositely-inclined surfaces and a seat formed between the same, means for changing the throw of the reciprocating element, a spring-pressed latch carried by the knitting-machine and normally engaging the seat, and a manually-controlled disengaging device for disengaging the latch from the seat.

8. In combination, a knitting-machine having a carriage adapted to be reciprocated in a straight line, power mechanisms including a constantly-reciprocating element operable in a given path and provided with a latch-seat, a latch carried by the carriage to cooperate with the latch-seat, and means mounted independently of the power mechanism and the knitting-machine to engage the latch while in the seat to disconnect the knitting-machine from the power mechanism.

9. In combination, a knitting-machine having a reciprocating carriage, power mechanism including a reciprocating element carrying a lug formed with a seat, a latch pivoted on the carriage and engaging the seat, and an independently-mounted disengaging device for disengaging the latch from the seat.

10. In combination, a knitting-machine, power mechanism adjacent the knitting-machine, comprising a reciprocating rod formed with a seat, a link connected to the rod, and means for imparting motion to the crank, a latch engaging the seat to impart motion to the knitting-machine, and an independently-controlled latch-disengaging device to disengage the latch from the seat to stop the knitting-machine.

11. In combination, a knitting-machine, power mechanism adjacent the knitting-machine, comprising a reciprocating rod formed with a seat and two oppositely-inclined surfaces adjacent the seat, a link connected to the rod, a crank connected to the link, and means imparting motion to the crank, a latch engaging the seat to impart motion to the knitting-machine, and an independently-controlled latch-disengaging device to disengage the latch from the seat to stop the knitting-machine.

12. In combination, a knitting-machine, 130

power mechanism having a reciprocating rod bearing an adjustable collar which is formed with a seat and two oppositely-inclined surfaces, a latch connected to the knitting-machine and normally engaging the seat, and an independently-controlled disengaging device to disengage the latch from the seat.

13. In combination, a knitting-machine, power mechanism having a reciprocating rod which bears a collar formed with a seat and two oppositely-inclined surfaces, a latch pivotally connected to the knitting-machine and normally in engagement with the seat, being guided thereto by one of the inclined surfaces, a disengaging device having a bar as long as the greatest throw of the reciprocating bar, springs for normally causing the disengaging-bar to contact with the latch, and means for manually withdrawing the disengaging device out of contact with the latch.

14. In combination, a knitting-machine having a reciprocating carriage, power mechanism including a crank and reciprocating

element connected to the crank, means adjustably connecting the reciprocating element to the crank to alter the throw of the former, a latch connecting the reciprocating carriage and the reciprocating element, and manually-controlled means for disengaging the latch to disconnect the power from the knitting-machine.

15. In combination, a knitting-machine, a connecting device carried by the knitting-machine, power mechanism formed with means which coöperates with the connecting device, and means mounted independently of the knitting-machine to engage the connecting device with the coöperating means on the power mechanism to disconnect the power from the knitting-machine.

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

THOMAS F. MORRIS.

Witnesses:

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DOUGLASS MCKAY.