

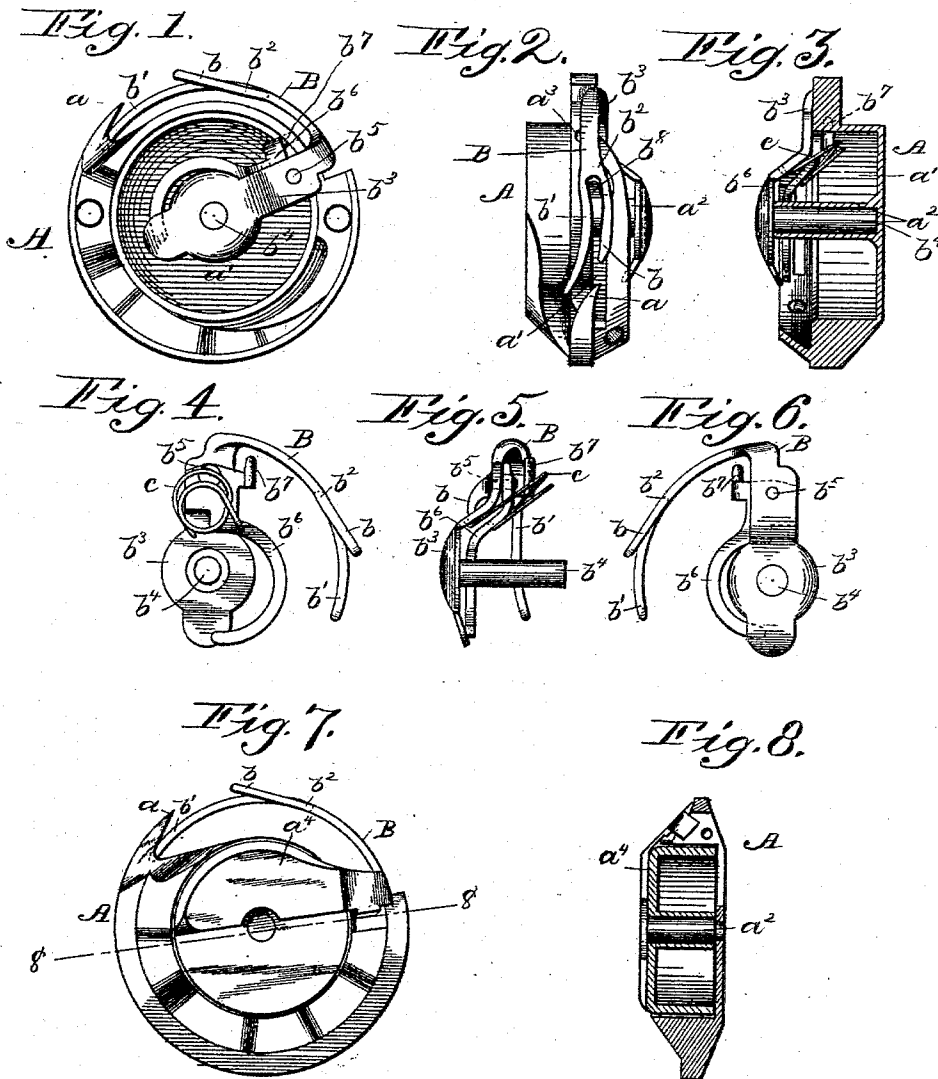
(No Model.)

2 Sheets—Sheet 1.

J. HEBERLING.
LOOPER FOR SEWING MACHINES.

No. 514,653.

Patented Feb. 13, 1894.



Witnesses:

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Inventor,

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By Macleod, Calver & Randall
His Attorneys

(No Model.)

2 Sheets—Sheet 2.

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Fig. 9.

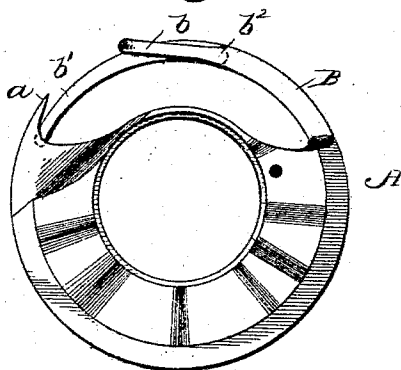


Fig. 10.

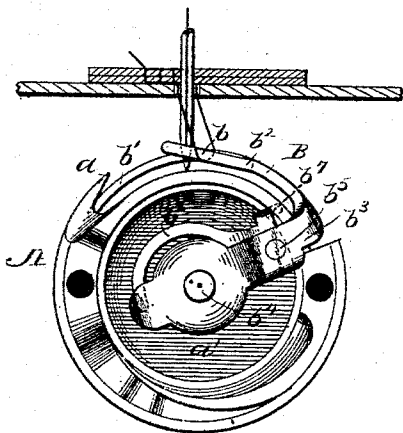
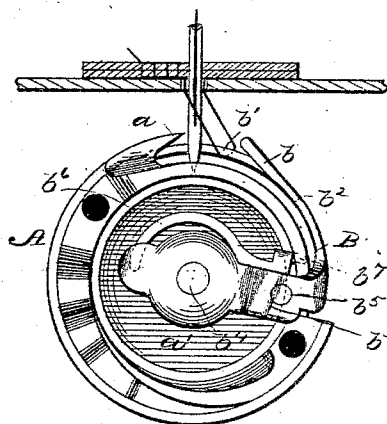


Fig. 11.



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UNITED STATES PATENT OFFICE.

JOHN HEBERLING, OF ROCHESTER, NEW YORK.

LOOPER FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 514,653, dated February 13, 1894.

Application filed August 19, 1891. Serial No. 403,091. (No model.)

To all whom it may concern:

Be it known that I, JOHN HEBERLING, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Sewing-Machine Loopers, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention has for its object to provide a rotating looper for forming a single thread chain stitch, the looper operating in the usual way to hold a loop of needle thread distended until the needle at its next descent can pass another loop through the same the looper then releasing the first loop which is tightened as the succeeding loop, drawn through the first loop, is distended.

My improved looper is adapted to run in the raceway of an ordinary rotary shuttle machine and is preferably removably attached to an ordinary rotary shuttle so that by removing the usual bobbin-case and bobbin from the shuttle and inserting the looper the machine may be instantly changed from a lock stitch to a chain stitch machine, or vice versa, with no more delay or trouble than would be required to remove and insert the ordinary bobbin case and bobbin.

In the accompanying drawings Figure 1 is a side view of a "Standard" rotary shuttle with my invention applied thereto. Fig. 2 is a top or edge view and Fig. 3 a section of the same. Figs. 4, 5, and 6 are detail views of the detachable looper removed from the shuttle. Fig. 7 represents a modification in which the looper is shown as being attached to a bobbin-case removably inserted in the shuttle, and Fig. 8 is a section of the same on line 8—8, Fig. 7. Fig. 9 represents my improved looper as being formed as a permanent part of the shuttle or body by which it is carried and which is thus a part of the looper proper. Figs. 10 and 11 represent the operation of my improved looper.

A denotes the body of an ordinary rotating or oscillating shuttle having at its periphery a point or beak a for seizing the loops of needle thread, the said body having a central circular recess a' for the reception of the bobbin case and bobbin.

At the center of the recess a' is a point or

stud a^2 which may be formed tubular or hollow, as in Fig. 3, or solid as in Fig. 8.

B denotes the looper proper the same consisting of a forked tail one prong b of which is formed short terminating some distance in advance of the beak of the shuttle and the other prong b' of which is of sufficient length to extend slightly past the said beak and is curved or deflected to one side so as to leave a clear thread passage between the same and said beak, as more clearly shown in Fig. 2, and between the said short and long prongs is a space b^3 for the descent of the needle. The short prong b is inclined outwardly from the body of the looper B forming an inclined loop-retaining shoulder at b^2 . The looper B is preferably formed integral with a body b^3 provided with a pin b^4 to enter the hollow post a^2 of the shuttle body A and pivoted to the said body b^3 at b^5 is a locking lever b^6 having a projection b^7 adapted to enter a hole or recess a^3 in the rim of the shuttle body to removably secure the looper proper to the said shuttle body, a spring, as c serving to force the said projection into said hole or recess. When the looper is to be removed from or inserted in the shuttle the operator takes the body portion b^3 thereof between the thumb and finger and the pressure of the finger on the curved portion of the locking lever b^6 withdraws the projection b^7 from the hole or recess of the shuttle, against the stress of the spring c , or holds said projection in such position that the looper may readily be inserted in operative position in the shuttle body or removed therefrom.

The operation of my invention is as follows: The body A with the attached looper being placed in position in the shuttle race of the machine and the latter being set in motion to rotate the said body and looper and reciprocate the needle the said needle first descends, and as it rises it throws out a loop of thread which is caught by the beak of the body A and as the said body continues its rotation and the needle rises farther the said loop is spread around the said body or shuttle in the usual manner, until the shuttle or body is in the position shown in Fig. 10 when the loop, having been partly drawn up by the take-up, will be momentarily detained by the thread retaining shoulder b^2 . At this moment

the needle has again descended into the space b^8 between the prongs of the fork of the looper said needle carrying its thread through the now distended loop held by the fork of the
 5 looper. As the body A continues its rotation the first loop passes on to the long prong b' , as shown in Fig. 11, and the beak of the body A now seizes a second loop from the needle as it rises, which second loop is drawn through
 10 the first loop as it is expanded and the said first loop is cast off from the laterally deflected tail of the said prong b' and is tightened into the work. Thus the operation continues each loop being drawn through the previous loop
 15 and forming the well known chain stitch.

In the modification shown in Figs. 7 and 8 the looper proper is attached to a bobbin case a^4 which is fitted into the central recess in the shuttle body A in the usual manner, said bobbin
 20 case serving as a holder for the looper and being adapted to be removed from the body A when it is desired to replace the same by an ordinary bobbin case having a bobbin filled with locking thread to make the lock
 25 stitch.

In the form of my invention shown in Fig. 9 the looper proper is shown as being a permanent part of the body A. This form of my invention is not preferred for the reason that
 30 to change the machine from a lock stitch to a chain stitch it is necessary to remove the body A from the shuttle race and as this requires the removal of the usual flange which holds the shuttle in the race the change is
 35 more troublesome to make than when the looper is made detachable from the shuttle body.

While I have referred to the body A as being a shuttle or shuttle body it will be understood that when the looper proper is applied
 40 thereto the said body becomes a rotating looper of which the part to which I have hereinbefore referred to as the looper proper is merely a tail piece, and the term "rotating
 45 looper" as hereinafter employed in the claims

of this specification will therefore be understood to include the body A.

The shuttle body or the body of my improved looper is independent of the shaft by which it is to be driven so that the needle
 50 thread passes around it in the same manner that it does around an ordinary shuttle, and the said looper may therefore be said to be loose with reference to the shaft by which it is driven, and the term "loose" as used in con-
 55 nection with the term "looper" in the claims of this specification will therefore be understood to mean a looper or looper body which disconnected from its driving shaft.

Having thus described my invention, I
 60 claim and desire to secure by Letters Patent—

1. A loose rotating looper provided with a forked tail or looper proper removably attached thereto, one prong of said tail terminating in advance of the beak of the looper
 65 and the other being extended past the said beak.

2. A loose rotating looper having a forked tail which is removably attached thereto and
 70 one prong of which terminates in advance of the beak of the looper and the other prong of which is extended past the said beak, combined with a spring-acted locking device for removably securing the said forked tail or
 75 looper proper to the body of the looper.

3. The combination with the rotating body A having a beak a and a centrally arranged pin or post a^2 and a hole or recess a^3 , of a
 80 looper B the body of which is provided with a pin supported by the said pin or post a^2 and with a spring-acted locking lever having a prong to enter the said recess or hole a^3 .

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

JOHN HEBERLING.

Witnesses:

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 WM. T. MCARTHUR.