

1,063,551.

A. F. KILLIAN.
KNITTING MACHINE.
APPLICATION FILED SEPT. 15, 1911.

Patented June 3, 1913.

2 SHEETS—SHEET 1.

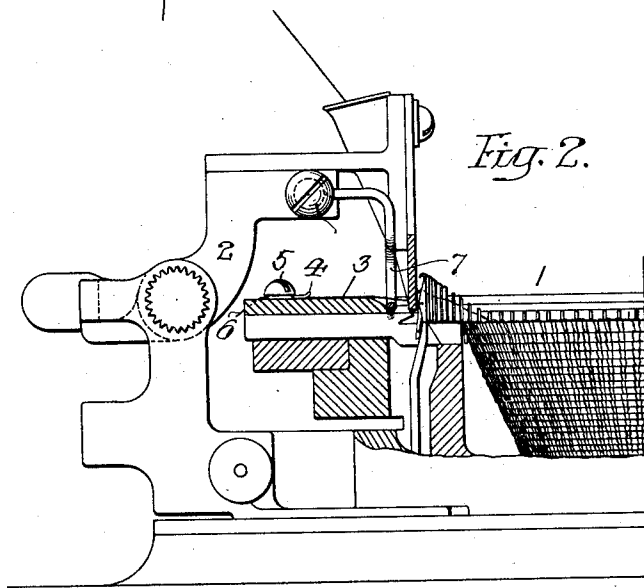
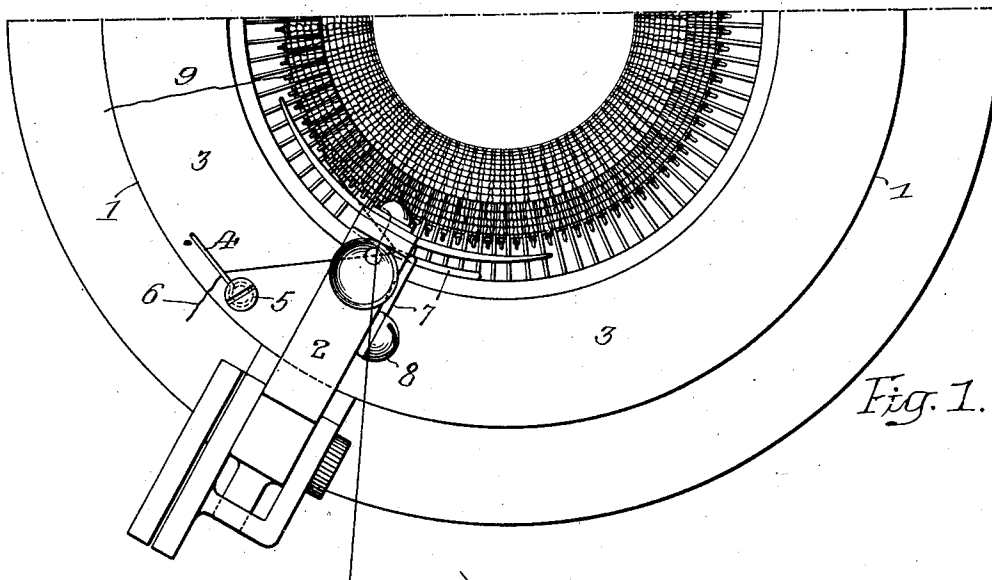
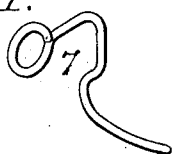


Fig. 4.



Witnesses—
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Fig. 3

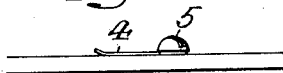
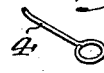


Fig. 5.



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2 SHEETS—SHEET 2.

Fig. 6

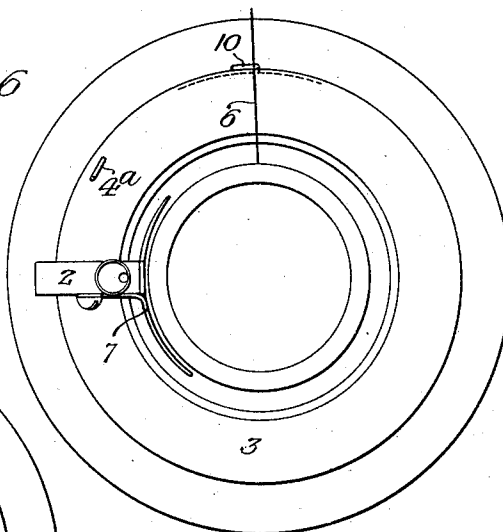


Fig. 7.

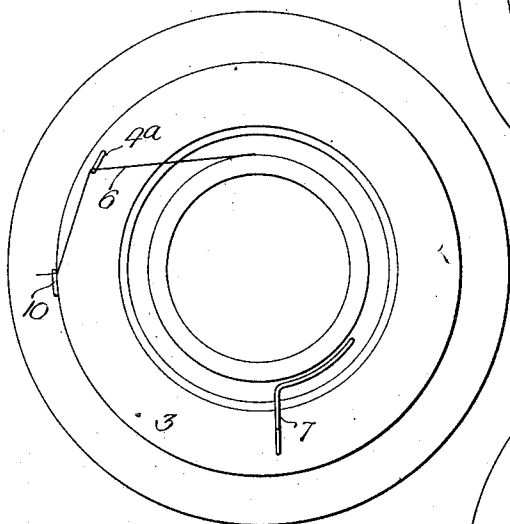


Fig. 8.

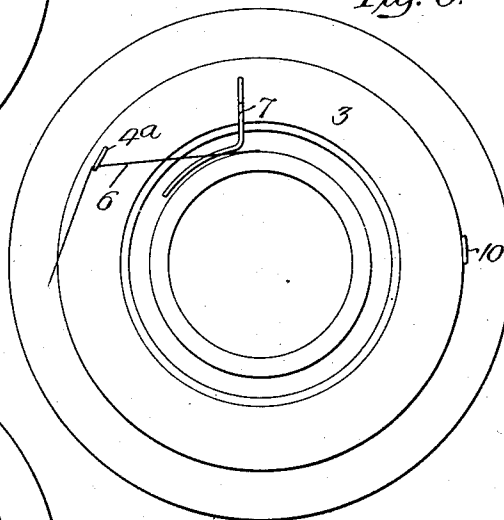
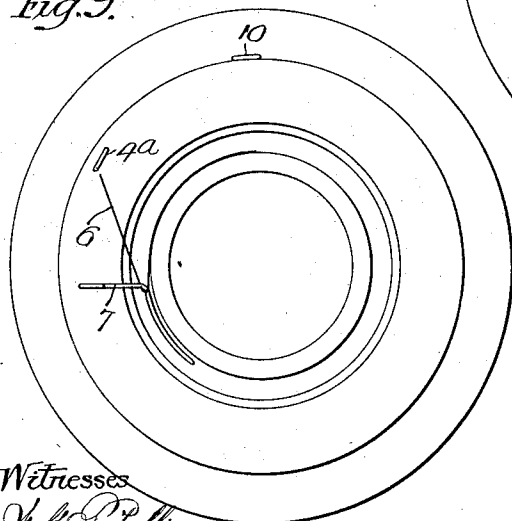


Fig. 9.



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UNITED STATES PATENT OFFICE.

AUGUST F. KILLIAN, OF PALMYRA, NEW JERSEY, ASSIGNOR TO WILLIAM F. TAUBEL, INCORPORATED, OF RIVERSIDE, NEW JERSEY, A CORPORATION OF NEW JERSEY.

KNITTING-MACHINE.

1,063,551.

Specification of Letters Patent.

Patented June 3, 1913.

Application filed September 15, 1911. Serial No. 649,530.

To all whom it may concern:

Be it known that I, AUGUST F. KILLIAN, a citizen of the United States, and a resident of Palmyra, Burlington county, New Jersey, have invented certain Improvements in Knitting-Machines, of which the following is a specification.

My invention relates to knitting machines; and the object of my invention is to provide means for knitting into the web or body of the stocking the free end of the thread employed in making the foot portion, together with the loose end of the thread of the leg portion after the latter has been transferred for the attachment of the heel and foot. These and other features of my invention are more fully described herein-after, reference being had to the accompanying drawings, in which:

Figure 1, is a plan view of a portion of a knitting machine head showing the application of my invention thereto; Fig. 2, is a sectional elevation of a part of the knitting machine illustrating the position of the attachments forming the subject of my invention; Figs. 3, 4 and 5, are enlarged views of the attachments forming the subject of my invention, and Figs. 6, 7, 8 and 9, are diagrammatic views illustrating the operation of the knitting machine when equipped with my improved attachments.

In the ordinary operation of knitting seamless stockings, half hose, &c., that is to say, in the operation of attaching the heel and foot to the leg portion, the latter is first knitted upon a rotary machine to make a seamless tube, and then it is transferred to another machine for the attachment of the heel and foot thereto. Accompanying the tubular leg portion, of course, is a loose end; the common practice being to attach the points some distance from the free end of the tube and then to unravel the stitches down to the loops engaged by the needles, and such action provides a loose end which is usually left free; and disposed, in most instances, on the inner surface of the stocking. Should this end be pulled, there is great danger of damaging the stocking, and when the thread for knitting of the heel and foot is laid against the needles, there is also another loose end which is usually left free on the inside of the stocking. If these ends, however, are caught in with the stitches formed in producing the heel and

foot, they will be removed from the danger point and a better article can be made. My invention, therefore, comprises means for effecting this result.

In the drawings, 1 represents the head of an ordinary circular knitting machine, and 2 a revolving thread carrier having means for introducing the necessary thread employed in the work to the knitting point. Surrounding the circular bank of needles is the usual flat sinker cap plate 3 of the knitting machine head, and I provide this with a spring pin 4 which may be secured to said plate in any suitable manner, as by a screw 5, and under this pin the loose end 6 of the thread forming the tubular leg portion may be engaged. In addition, the thread carrier 2 which revolves around the bank of needles carries a hook member 7 forming a guide, which hook member may be secured in place by a screw 8 and is so disposed as to engage the thread end 6 at a point between the spring pin 4 and the knitting needles carrying the stocking leg. This hook member 7 may be so disposed that the loose thread end 6 engaged thereby will be laid against the needles below the hooks of the same so that it may be caught in and knitted with the main thread forming the heel and foot or other portion of the stocking, half hose, &c., in process of manufacture.

When commencing the heel and foot there will, of course, be a short thread end of the new thread, indicated at 9, that will be free from the portion forming the stitches, and instead of placing this end loose within the leg of the stocking, as has been the common practice, it is extended out over the head of the machine, and when the thread feeding attachment comes around the hook member 7 engages and feeds said loose thread end 8 against the needles so as to combine with the main thread and form stitches in substantially the same manner as the loose end 6 is knitted in.

Instead of the form of spring pin 4 shown in Figs. 1 and 2, to engage the loose thread end 6, I may provide a hook 4^a, let into said plate and lying sufficiently close thereto to retain the thread end when engaged thereby, and provide the rotatable element which supports the thread carrier with a clip or engaging member 10 under which said loose thread end 6 may be caught, as indicated in Fig. 6. Then when the thread carrier is

rotated, the loose end will be engaged by the hook member 7 and laid under the clip 4^a, as indicated in Fig. 7, where it is held until the return of the thread carrier and hook member as indicated by Fig. 8, and then carried into and knitted with the stitches of the stocking, half hose, &c., as indicated in Fig. 9.

I claim:

10 1. The combination with a knitting machine, of the frame, a bank of needles adapted to carry a stocking in process of manufacture, a member carried by the frame for engaging a loose thread end extending from
15 said stocking, and guiding means for delivering said loose thread end adjacent the knitting thread whereby it may be knitted with the same into the body of the stocking.

20 2. The combination with a knitting machine, of the frame, a bank of needles adapted to carry a stocking in process of manufacture, a spring clip carried by the frame for engaging a loose thread end extending from said stocking, and guiding means for
25 delivering said loose thread end adjacent the knitting thread whereby it may be knitted with the same into the body of the stocking.

30 3. The combination with a knitting machine, of a frame, a bank of needles, sinkers, said needles being adapted to carry a rib top or welt, a thread guide, and a guard lying above and substantially parallel with the thread guide and having an end extending
35 adjacent the top of the sinkers.

40 4. The combination with a knitting machine, of a frame, a bank of needles, sinkers, said needles being adapted to carry a rib top or welt, a thread guide, and a guard above the sinkers having an end extending adjacent the inner edge of the sinker cap top.

45 5. The combination with a knitting machine, of the frame, a bank of needles adapted to carry a stocking in process of manu-

facture, a member carried by the frame for engaging a loose thread end extending from said stocking, a rotatable member for engaging said thread end, and guiding means for delivering said loose thread end adjacent the knitting thread whereby it may be knitted with the same into the body of the stocking.

6. The combination with a knitting machine, of the frame, a bank of needles adapted to carry a stocking in process of manufacture, a spring clip carried by the frame for engaging a loose thread end extending from said stocking, a rotatable member for engaging said thread end, and guiding means for delivering said loose thread end adjacent the knitting thread whereby it may be knitted with the same into the body of the stocking.

7. The combination with a knitting machine, of the frame, a bank of needles therein, a thread guide, said needles being adapted to carry a stocking to be knitted, a rotatable member for engaging loose thread ends extending from said stocking, and a guard member for guiding to the knitting position any loose end of thread extending from the stocking.

8. The combination with a knitting machine, of the frame, a bank of needles therein, a thread guide, said needles being adapted to carry a stocking to be knitted, a rotatable member for engaging loose thread ends extending from said stocking, and a guard member mounted adjacent the thread guide for guiding to the knitting position any loose end of thread extending from the stocking.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

AUGUST F. KILLIAN.

Witnesses:

JACOB H. BLAETZ,
D. J. MILLER.