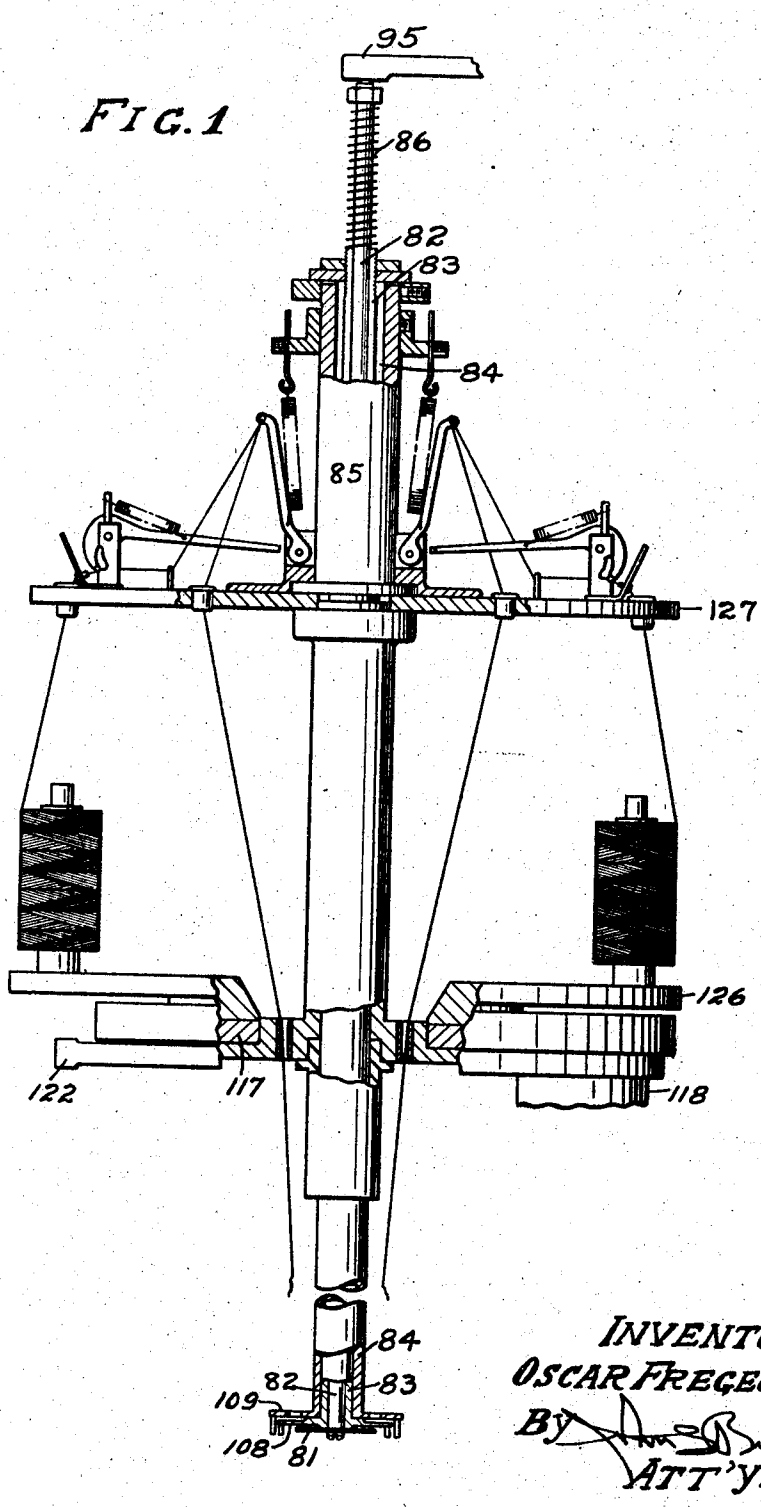
Aug. 20, 1946. O. FREGEOLLE 2,406,285

FABRIC TAKE-UP

Original Filed Oct. 18, 1944 3 Sheets-Sheet 1

FIG. 1



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FIG. 2

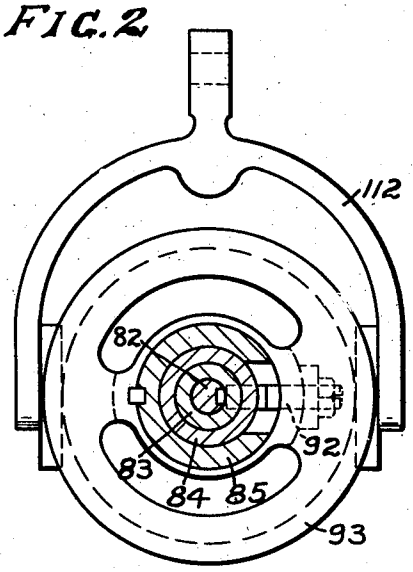
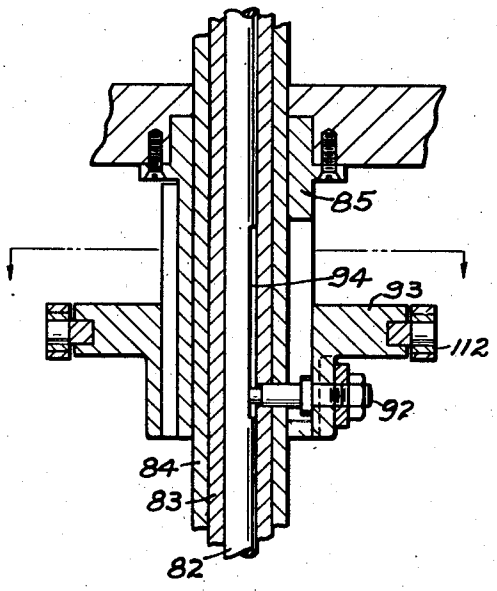


FIG. 3



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FIG. 4

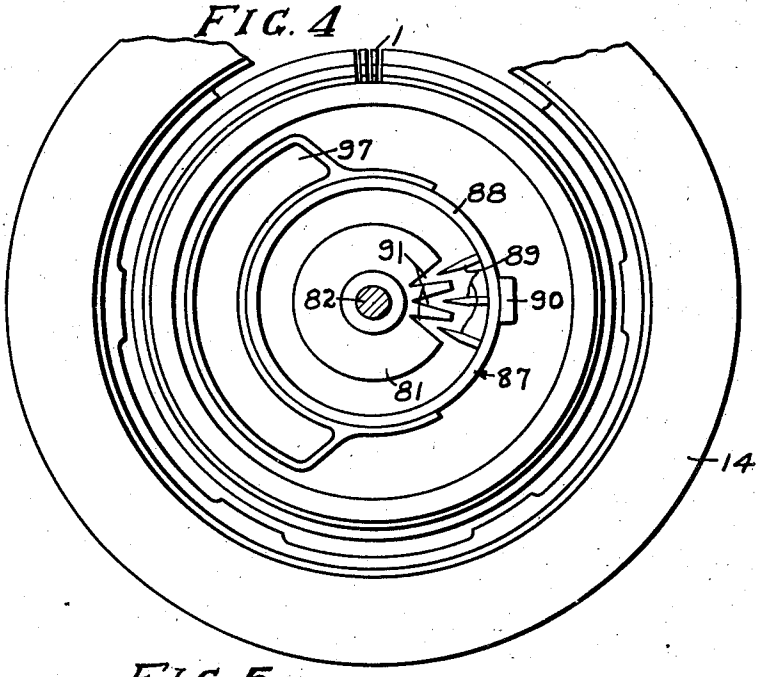
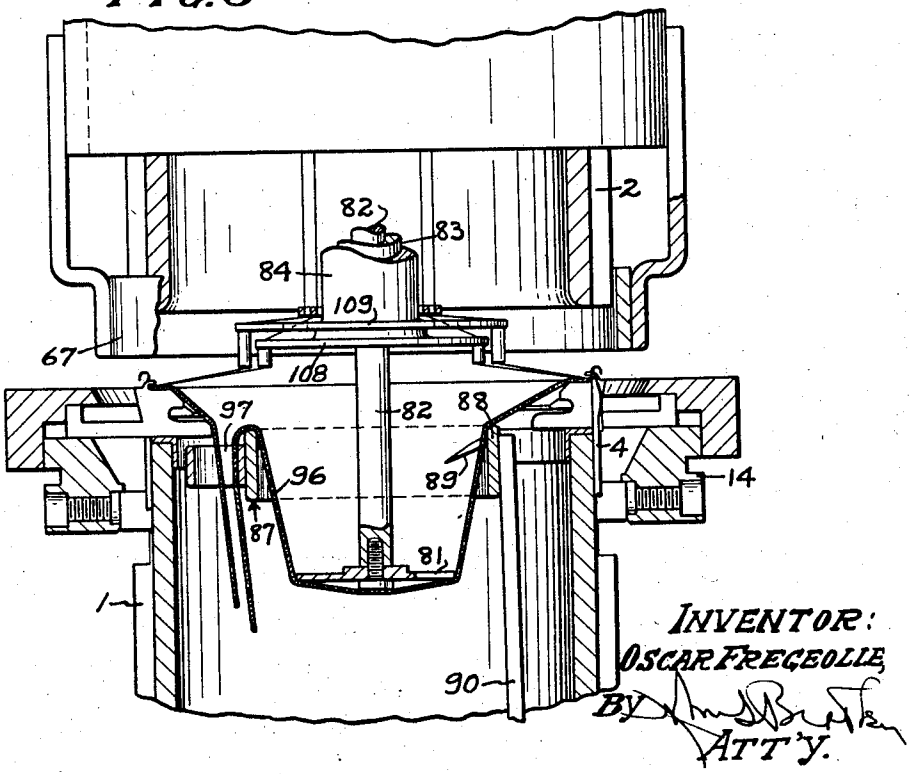


FIG. 5



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FABRIC TAKE-UP

Oscar Fregeolle, Central Falls, R. I., assignor to Hemphill Company, Central Falls, R. I., a corporation of Massachusetts

Original application October 18, 1944, Serial No. 559,136. Divided and this application September 12, 1945, Serial No. 615,809

7 Claims. (Cl. 66—150)

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This is a division of application for United States Letters Patent #559,136, filed October 18, 1944.

The circular, independent needle, type is primarily intended for true rib knitting. Since such knitting is accomplished through the cooperation of needles working simultaneously in both cylinders without the aid of sinkers or other similar devices for insuring that the loops are properly cast off, some means for maintaining tension upon the fabric is essential to insure that casting off will be accomplished effectively.

In the drawing:

Fig. 1 is a general view of the mechanism for producing wrap patterns and also of the means for applying tension to the fabric through the heel and toe pocket;

Fig. 2 is a view of a part of the means for operating the wrap mechanism;

Fig. 3 is a view primarily illustrating the means through which these parts and the heel and toe pocket spreader are operated;

Fig. 4 is a view illustrating particularly the heel and toe pocket spreader and the device for applying tension to the fabric immediately following these parts independently of the regular fabric tension; and

Fig. 5 is an elevation partly in section illustrating this tensioning device and also showing the position of the wrap spindle with respect to it and to the cylinders.

Generally speaking, any suitable type of fabric take-up may be employed for this purpose. However, the knitting of the heel and toe pockets introduces unsymmetrical portions of fabric which completely eliminate the possibility of uniform tension being applied to the fabric immediately succeeding them by the usual fabric take-up means. Consequently, a supplementary take-up device should be used to apply tension to the heel and toe pockets so that the immediately succeeding fabric may be properly tensioned at all points.

A form of supplementary take-up of this character is shown in Figs. 1, 4 and 5. It consists of a disc-like pocket spreader **81** mounted on the end of a rod **82** extending from the uppermost part of the machine through tubular shafts **83** and **84** within housing **85**. Normally rod **82** is maintained in its uppermost position, that shown in Fig. 1, by a spring **86**. In this position, spreader **81** is inoperative.

Associated therewith is the supplementary fabric take-up proper **87** (Figs. 4 and 5). This consists of a ring **88** longitudinally movable within the lower cylinder **1**, provided with inwardly projecting needle-like points **89** adapted to engage with the fabric of the heel or toe pocket. Ring **88** is mounted on a rod **90** by which it is moved up and down by suitable mechanism. In spreader **81** are V shaped recesses **91** adapted to register with points **89** as shown in Fig. 4.

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Registry is maintained through a pin **92** (Figs. 2 and 3) mounted in a ring **93** (Figs. 2 and 3) vertically slidable on housing **85** and projecting through a slot in this housing so as to engage a recess **94** in rod **82**. This recess is of sufficient length to permit rod **82** to move up and down the required distance but will prevent it from turning independently of housing **85**. Spreader **81** and supplementary take-up **87** rotate with the cylinders, consequently, their relative positions in this respect are constant.

When the heel pocket is completed rod **82** is caused to move downward against spring **86** by suitably timed operating means, indicated in Fig. 1 by the lever **95**, to engage spreader **81** with it. This spreads the pocket **96** substantially as shown in Fig. 5. Thereupon supplementary fabric take-up **87** moves up from a low position, passes along the outside of toe pocket **96** to substantially the position shown in Fig. 5, the points **89** penetrating the fabric of the toe pocket. Then spreader **81** is permitted to move upward again to its inoperative position and take-up **87** is released to descend of its own weight, supplemented by a spring, if desired, as the subsequent knitting progresses and maintaining tension upon the fabric above the toe pocket.

When the supplementary take-up has reached a low position it is released, the tension then being maintained by the regular fabric take-up. After the toe pocket is completed the same procedure is repeated to maintain tension on this side of the fabric subsequently knitted.

During both of these operations the rest of the fabric such as that of the leg passes through the arcuate slit **97** forming an extension of take-up **87** on the side opposite points **89**. This fabric is tensioned throughout by the regular fabric take-up. Through the cooperation of the regular and auxiliary take-ups an adequately uniform tension is maintained on the fabric at all points to insure perfect knitting.

The auxiliary take-up just described is a modification of that shown in U. S. Patent #2,068,605 to which reference may be had for a more detailed description of its general characteristics and mode of operation. Except for the heel spreader **81** and its operating mechanism the take-up may be considered as substantially identical in construc-

tion and in operation to that of this patent. Attention is called to claims 3, 4 and 8 of the patent referred to which are believed to cover broadly the supplementary take-up of this invention.

I claim:

1. In a knitting machine, an auxiliary fabric take-up consisting of a vertically movable ring provided on one side with inwardly and downwardly extending needle-like points adapted to engage knitted fabric and a vertically movable fabric spreader adapted to pass through said ring, said spreader being provided with slots to permit passage past said points.

2. In a knitting machine having superposed, axially aligned, rotatable, needle cylinders, an auxiliary fabric take-up consisting of a vertically movable ring provided on one side with inwardly and downwardly extending needle-like points adapted to engage knitted fabric and a vertically movable fabric spreader adapted to pass through said ring, said spreader being provided with slots to permit passage past said points.

3. In a knitting machine having superposed, axially aligned, rotatable, needle cylinders, an auxiliary fabric take-up consisting of a vertically movable pocket spreader adapted to engage the heel or toe pocket of a stocking being knitted and a vertically movable ring adapted to pass by said spreader, when said spreader is engaged with a pocket, to engage said pocket adjacent its finishing end and to thereafter maintain tension upon the fabric directly above said pocket as it is knitted, said ring being provided with fabric engaging points upon one side and said spreader being provided with corresponding slots and

means for causing said ring and said spreader to rotate in unison.

4. An auxiliary take-up for a knitting machine which includes a vertically movable ring having fabric engaging points on one side and a frame-like extension on the other defining an arcuate slot through which all of the knitted fabric can pass with the exception of that immediately below and above said points.

5. In a knitting machine, an auxiliary fabric take-up consisting of a vertically movable ring provided on one side with inwardly and downwardly extending needle-like points adapted to engage knitted fabric and, on the opposite side, with an arcuate, fabric receiving slot.

6. In a knitting machine, an auxiliary fabric take-up consisting of a vertically movable ring provided on one side with inwardly and downwardly extending needle-like points adapted to engage knitted fabric and, on the opposite side, with an outwardly extending, arcuate, fabric receiving slot and a vertically movable fabric spreader adapted to pass through said ring.

7. In a knitting machine, an auxiliary fabric take-up consisting of a vertically movable ring provided on one side with inwardly and downwardly extending needle-like points adapted to engage knitted fabric and, on the opposite side, with an outwardly extending, arcuate, fabric receiving slot and a vertically movable fabric spreader adapted to pass through said ring, said spreader being provided with slots to permit passage past said points.

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