Sept. 3, 1946. E. KILLIAN 2,406,775

YARN FEEDING MEANS

Filed Oct. 20, 1944 3 Sheets-Sheet 1

FIG. 1.

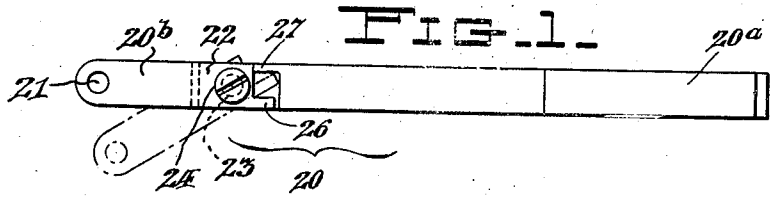


FIG. 2.

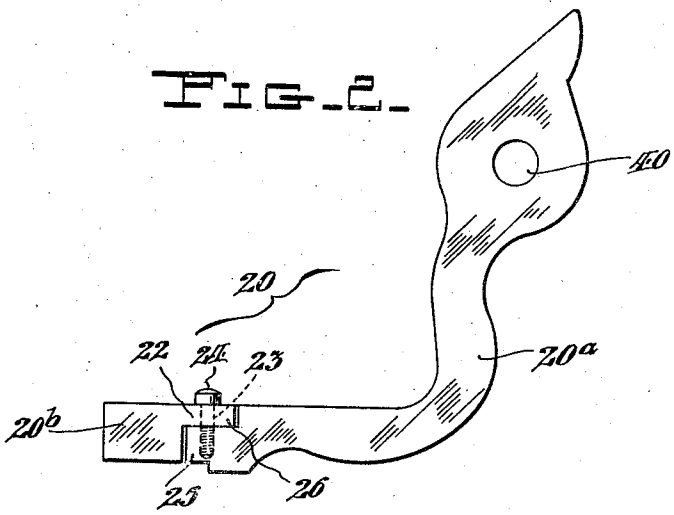


FIG. 4.

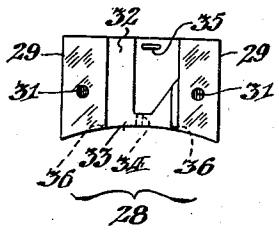


FIG. 3.

FIG. 5.

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Sept. 3, 1946. E. KILLIAN 2,406,775

YARN FEED MEANS

Filed Oct. 20, 1944 3 Sheets-Sheet 2

FIG. 6.

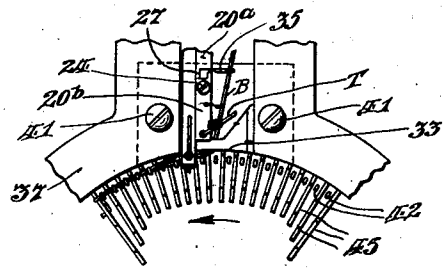


FIG. 7.

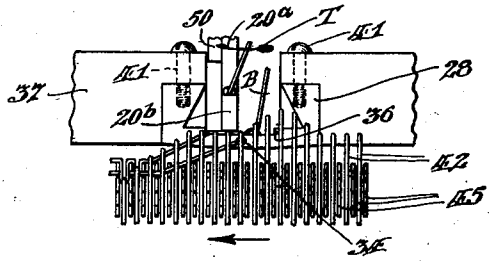


FIG. 8.

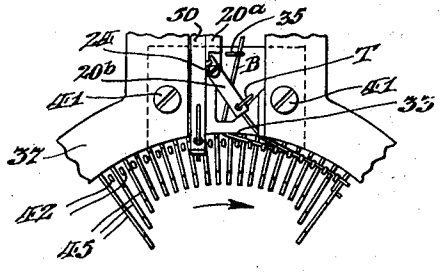


FIG. 9.

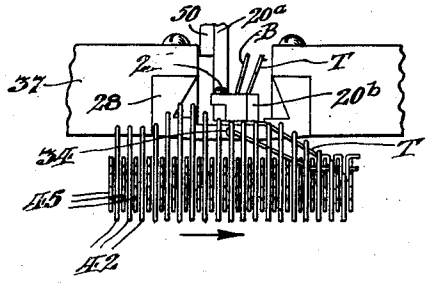


FIG. 10.

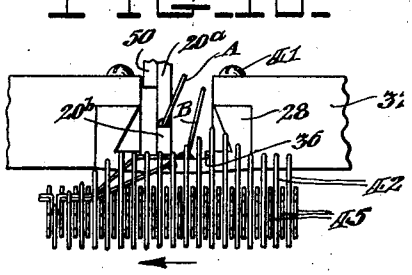
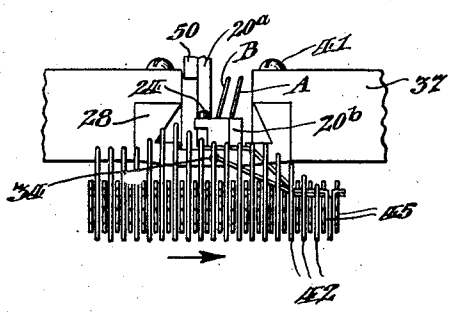


FIG. 11.



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Sept. 3, 1946. E. KILLIAN 2,406,775

YARN FEED MEANS

Filed Oct. 20, 1944 3 Sheets-Sheet 3

Fig. 12.

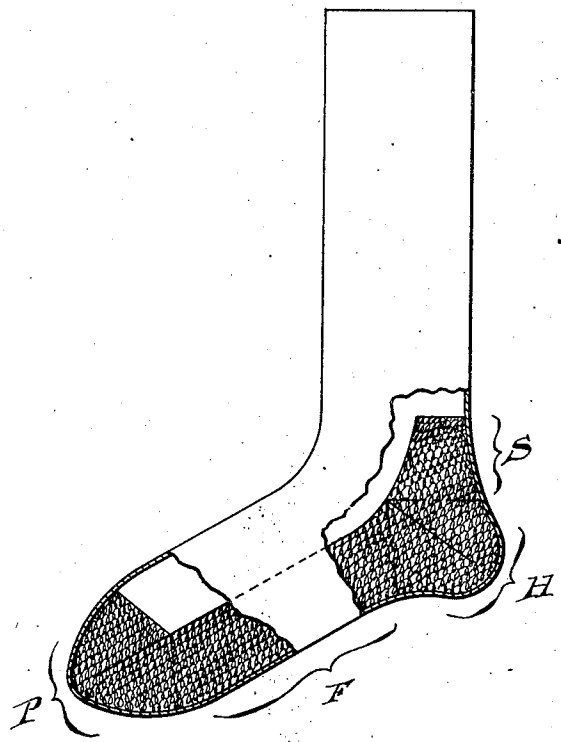
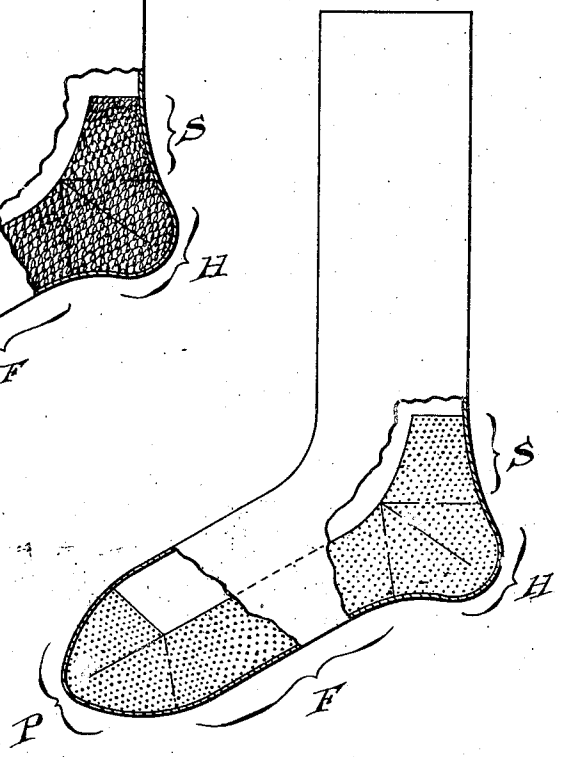


Fig. 13.



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UNITED STATES PATENT OFFICE

2,406,775

YARN FEED MEANS

Ezekiel Killian, Reading, Pa., assignor, by direct and mesne assignments, of one-fourth to E. Louis Kotzen, one-fourth to Samuel R. Kotzen, one-fourth to Myer E. Kotzen, all of Reading, Pa., and one-fourth to Howard C. Mohn Hosiery Co. Inc., Reading, Pa., a corporation of Pennsylvania

Application October 20, 1944, Serial No. 559,527

18 Claims. (Cl. 66—125)

1

This invention generally pertains to yarn feeding means for knitting machines and the like, and more particularly to novel yarn feeding means of the type forming part of the subject matter of my copending application Serial No. 528,110, filed October 20, 1944, as herein illustrated.

Modern knitting machines of the "Banner" type utilized for the production of seamless hosiery, such as army socks, are commonly provided with yarn feeding means comprising a plurality of independently operable yarn guides or fingers adapted respectively to feed yarns of different size, quality, material, color, etc., for use either singly, or in desired combination or relation, in knitting different parts of a stocking or sock; the several yarn guides being selectively controlled for individual and combined action as desired, by the standard or conventional patterning means of such machines.

Provision has heretofore been made in such machines to feed the yarn so as to effect terry loops, as well as plating, in certain courses or areas of the hosiery knitted thereby. However, the means provided for this purpose ordinarily involve separate yarn feeding arrangements or devices, one for effecting terry loops and another for effecting plating. Furthermore, the prior art yarn feeding arrangements for effecting terry loops are either incapable of providing such loops in every course of certain areas, such as the heel and toe pockets of the hosiery knitted by the machine, or involve the addition of more or less complicated and expensive installations to the machine.

My said copending application is directed to a novel method and means for providing terry loops and plating in every course of such areas as the heel and toe pockets of hosiery knitted on machines of the referred to type, and the novel means disclosed in said application includes the yarn feeding arrangement forming the subject matter of the present invention and application. The disclosure hereof is consequently coextensive with the disclosure of said pending application, and will serve to exemplify, and facilitate an understanding of, the various novel phases, features and advantages of the invention here involved.

One object of my invention is to provide novel yarn feeding means in knitting machines or the like, comprising a plurality of separate yarn feed elements which are cooperatively arranged for united yarn feeding action in a variable positionally related order, one of which elements is limitedly movable by its yarn relative to another of said elements in such manner that said positionally related order of the elements will be varied in

2

response to a certain change in the feeding direction of the yarn fed by said movable element.

Another object is to provide such means in which the movable yarn feeding element is adapted to be selectively positioned by the yarn being fed thereby.

A further object is to provide such means in which the movable yarn feeding element is selectively positioned by its yarn in correspondence with a change in the feeding direction thereof.

An additional object is to provide such means in which the movable yarn feeding element is adapted to be moved by its yarn to different positions of cooperation with certain elements of the machine.

A further object is to provide a novel yarn feed device or finger for knitting machines or the like, comprising two sections or parts arranged so that when the device is mounted in operative position in a machine, one of the parts will be moved relative to the other part by the yarn in the manner and for the purpose as herein disclosed.

An additional object is to provide such a yarn feed device for circular knitting machines having a laterally swingable yarn guide part or member adapted to feed a supplemental or auxiliary yarn to the knitting elements from two different positions of feed as determined by the movement of the yarn in one feeding direction or the other.

It is also an object to provide such a yarn feed device which embodies the mentioned and other structural and functional features of advantage over similar devices of the prior art.

With these and other objects in view, which will become more readily apparent from the following detailed description of the practical and illustrative embodiments of my novel yarn feed means shown in the accompanying drawings, the invention comprises the new elements, features of construction and arrangement of parts in cooperative relationship, as herein disclosed and more particularly pointed out in the appended claims.

In the drawings:

Figure 1 is a top plan view, on an enlarged scale, of one form of novel yarn feeding device, or finger for knitting machines and the like, constituting a part of my invention.

Fig. 2 is a side elevational view of the device shown in Fig. 1, but on a somewhat smaller scale.

Fig. 3 is a partial cross-sectional elevational view through a circular knitting machine of the "Banner" type, and shows my invention applied thereto.

Figs. 4 and 5 are, respectively, top plan and front elevational views of a novel throat plate

device provided with yarn feed means in accordance with my invention.

Fig. 6 is a fragmentary plan view, as seen by looking in the direction of the arrows 6—6 on Fig. 3, and shows the relationship of my novel yarn feeding means when the machine is functioning to effect terry loops during movement of the needle cylinder to the left.

Fig. 7 is a front elevational view, of Fig. 6, with the needles and dividers arranged in a straight plane to better illustrate the yarn arrangement.

Fig. 8 is a plan view similar to Fig. 6, but illustrates the relative position of the various parts during movement of the needle cylinder to the right.

Fig. 9 is a front elevational view of Fig. 8, but with the needles and dividers arranged in a straight plane, as in Fig. 7.

Fig. 10 is a front elevational view similar to Fig. 7, but shows certain parts in another position, and illustrates the relationship of said parts when the machine is functioning to effect plating during movement of the needle cylinder to the left.

Fig. 11 is a front elevational view similar to Fig. 9, and illustrates the relationshp of the parts when the machine is functioning to effect plating during movement of the needle cylinder to the right.

Fig. 12 is a side elevational view of a foot hose or sock which is partly broken away, and diagrammatically illustrates certain internal areas provided with terry loops, as effected by the novel means of my invention.

Fig. 13 is a side elevational view of a foot hose or sock, similar to Fig. 12, and diagrammatically illustrates certain internal areas provided with plating, as effected by the novel means of my invention.

In the referred to "Banner" type and other circular knitting machines, the latch or guard ring of the machine is provided at the yarn feed point with a so-called "throat opening" within which a plurality of yarn guide or feed fingers are located which are selectively operated by a pattern mechanism in well-known manner. Usually, the said throat opening has a floor, or throat plate, which serves as a support upon which the active yarn guide finger, or fingers rest, with their delivery eyes in a predetermined horizontal plane close to the needle row. In passing from the active guide eye to the needle hooks, the yarn slides or reeves over the edge of this floor or throat plate, so that such edge, and the terminal corners thereof, normally define the delivery plane, or point, for any given yarn.

As fully disclosed in my said copending application, the novel yarn feed invention here involved may be cooperatively associated with the invention of said application to provide an arrangement which can be selectively adjusted to effect either plating or terry loops with a secondary or auxiliary yarn in every course knitted with a main or body yarn during rotary or reciprocal action of the needles and during movement of the needle series of the machine through a single knitting wave.

Accordingly, the novel yarn feed means of my invention may be utilized to facilitate the production of terry loops on the inside of a foot hose, or sock, as indicated for example in Fig. 12, i. e., in every course of the high splice section S, the heel pocket H, the foot sole section F, and the toe pocket P.

Similarly, the novel yarn feed means of my invention may be utilized to facilitate the production of plating on the inside of a foot hose, or sock, as indicated for example in Fig. 13, i. e., in every course of the high splice section, the heel pocket, the foot sole section, and the toe pocket; these sections or parts being identified in Fig. 13 by reference characters corresponding with those of Fig. 12.

To effect proper feeding of the yarn when the knitting machine functions to produce knitted sections embodying either terry or plating loops, I provide novel yarn guide or feeding means comprising the yarn guide device or finger shown more particularly in Figs. 1 and 2 of the drawings. In order to facilitate an understanding of how the said finger operates when associated with a knitting machine, such for example as a circular knitting machine of the type known as a "Banner" machine, the description will be proceeded with by first explaining the construction of my novel yarn feeding means, and then briefly describing its operation when cooperatively associated with such a knitting machine. In this connection it is, of course, to be understood that the novel yarn feeding means of my invention is not limited in its construction and use to this one practical and illustrative embodiment, or purpose.

The yarn feeding element or finger generally indicated by the numeral **20**, is constructed so as to correspond in size and shape with the similar prior art devices used for feeding yarns, for example, the fingers employed in a circular knitting machine of the said "Banner" type. The finger **20** is also provided with the usual parts and features embodied in the similar prior art fingers of the particular machine with which it is to be cooperatively associated. However, instead of being constructed as usual, i. e., of a single piece of metal or other material, it is made in two parts identified as **20a** and **20b**. The part **20b** forms a continuous extension of the part **20a** so that when the two are united as shown in Figs. 1 and 2, they form a yarn feed finger which corresponds in size, configuration and other characteristics, substantially with the other standard yarn feed fingers associated with the knitting machine to which it is applied. This feature is of significance in that it permits the ready substitution of my novel two-part yarn feed finger for one of standard construction, without necessitating any alterations insofar as the conventional arrangement and operation of the yarn feed fingers and associated parts is concerned.

The separate front end, or part **20b**, of the finger **20**, is provided with a vertically extending yarn guide aperture **21**, a portion **22** having an aperture **23** through which passes the shank of a screw **24** in turn secured in a threaded bore in the lower offset extension **25** of the front section of the finger part **20a**. The upper rear section of the part **20b** is provided with an abutment member **26** designed to cooperate with a complementary abutment member **27** integrally formed on the finger part **20a**. By this arrangement, the part **20b** is limitedly movable or swingable in a lateral direction with respect to the part **20a**, i. e., the part **20b** can be laterally swung from the position shown in full lines in Fig. 1, to the position indicated in dot-and-dash lines in said figure. Movement of the part **20b** beyond these extreme positions is prevented by the complementary abutment elements **26** and **27**, as clearly shown.

In the knitting machine herein disclosed to illustrate one practical use of my novel yarn feeding means, the device **20** is cooperatively associated with another and separate yarn feeding

element embodied in a throat plate unit 28 shown in Figs. 4 and 5. This unit is also generally the same in size and configuration as the similar units ordinarily associated with the latch ring of conventional circular knitting machines, such as the referred to "Banner" type machines. As usual, this unit is of a generally U-shaped configuration and comprises a pair of oppositely arranged side members 29, each of which has a threaded bore 31 in its upper section arranged to retain the screws which secure the unit to the latch ring of the machine. A bottom or floor section 32 extends between the members 29 on which the yarn feeding fingers of the machine are adapted to rest when in active position. The front end of the bottom section 32 is provided with an edge 33 over which the yarn from the yarn feeding fingers slides or reeves during its feeding movement to the needles and sinkers of the machine.

In accordance with my invention, the front end of the bottom section 32 is provided with a transversely extending yarn guide aperture 34, below the yarn reeving edge 33, as shown in Figs. 4 and 5. At the rear of the bottom section there is also provided a suitable yarn guide element 35. At each end of the yarn reeving edge 33, the unit 28 is provided with a yarn guide notch 36 adapted to limit the lateral movement of the yarn effected by reciprocal action of the needle cylinder of the machine while the yarn from the device 20 is traveling over the reeving edge 33 on its way to the knitting elements.

By referring more particularly to Figs. 3, 6 and 7, it will become apparent how my novel yarn feeding means, comprising the device or finger 20 and unit 28, is associated with a standard latch ring 37 of a circular knitting machine. The device 20 is mounted in position between the usual pair of vertical bearing lugs 38 united with and extending upwardly from the latch ring 37. The device 20 is arranged to be vertically moved between active and inactive position as determined by the usual mechanism of the machine. To permit such movement of the device 20, it is mounted on the usual pin or rod 39 which passes through an aperture 40 in its section 20a, the ends of which rod are securely seated in aligned apertures of the lugs 38.

To afford comparison and further clarify the arrangement of my invention, a yarn feeding finger 50 of standard or conventional construction is shown in Figs. 3, 6 and 7, directly adjacent to the finger 20; the latter being disclosed in lowered or active position in said figures, while the former is shown in raised or inactive position.

The throat plate unit is secured, as usual, in a cut-out section of the forward lower portion of the latch ring 37, by means of two screws 41 which pass through suitable vertical apertures in the latch ring above the unit and are fastened in the threaded bores 31 thereof, as clearly shown.

In accordance with the common practice, the latch ring is pivotally connected at one side with a stationary part of the knitting machine (connection not shown) so that it may be swung vertically from the position shown in Fig. 3, to a position above and to one side of the needle cylinder in which are mounted the usual series of independently operable needles actuated in well known manner. An adjustment screw 43 is vertically mounted, as usual, in a threaded bore in a portion of the latch ring 37 adjacent to one of the bearing lugs 38, so that the lower extremity of the screw rests on a stationary member

44 of the knitting machine. The adjustment screw 43 is provided for the purpose of establishing the vertical position of the throat plate unit 28 and the active yarn feeding fingers associated with the latch ring 37, relative to the needles 42 and sinkers 45. After proper adjustment, the screw 43 is fixed in position by a set screw 46 threadedly mounted in the side of the latch ring section through which the screw 43 extends.

A vertical bracket 56 is secured to a side member of the latch ring 37, and said bracket is provided at its upper end with a horizontally positioned plate 57 through which extend the usual porcelain eyelets adapted to guide the yarns moving from the cones or bobbins (not shown) of the machine, to the various yarn feed means, such as the devices 20, 28 and 50.

From the following description of the operation of the device 20 and unit 28 to effect terrying or plating, it will become apparent that these two elements are cooperatively arranged for united yarn feeding action in a positionally related order which is automatically varied during certain phases of the operation of the machine, and that the unit 28 comprises yarn feeding means which is fixedly related to the yarn feeding device 20, while the latter comprises yarn feeding means which is limitedly movable by its yarn relative to the unit 28, with the result that positionally cooperative order of these two elements will be varied in response to a certain change in the feeding direction of the yarn fed by the device 20.

Operation of invention to effect terrying

When it is desired to produce a knitted fabric such as an army sock of the type illustrated in Fig. 12, in which the body yarn consists of about 50% cotton and 50% wool, and the terry loops are produced with yarn consisting of 100% wool, the novel means of my invention are arranged and operated as follows:

The body yarn B from the proper yarn cone or bobbin is passed through a suitable eyelet in the plate 57, through the yarn guide element 35 at the rear of the throat plate 28, and through the yarn guide aperture 34 below the reeving edge 33 at the front end of the throat plate and directed to the needles 42 in usual manner when operation of the machine is about to commence. The terry yarn T is similarly taken from the proper yarn cone or bobbin, is passed through a suitable eyelet in the plate 57 located to the right of the yarn guide finger 20 (Fig. 6), so that it may be extended downwardly from said eyelet to the left and through the yarn guide aperture 21 of the yarn guide finger 20, and then directed to the needles 42, over the reeving edge 33 of the throat plate 28 at the left end yarn guide notch 36, as shown in Figs. 6 and 7, to effect the production of terry loops in the manner next explained.

Figs. 6, 7, 8 and 9 illustrate the action of the independently operable series of latch needles 42 and cooperating sinkers 45 during feeding thereto of the body and terry yarns by the novel yarn feeding means of my invention to effect knitting of the body yarn into plain loops and the joining therewith of terry loops.

When the independently operated needles 42 move to the left, as indicated by the arrows in Figs. 6 and 7, the body yarn B, after it leaves the aperture 34 at the front end of the throat plate 28, is fed to the needles as shown in said figures, at a lead angle such that it will enter the throats 45a of the sinkers 45, substantially at the knitting

point, or where the needles **42** and sinkers **45** cooperate to form successive plain stitches in connection with the carrying out of a single knitting wave by the latch needles **42** in accordance with the known practice. Simultaneously with the formation of the plain loops by the body yarn, the terry yarn T, after it leaves the aperture **21** of the yarn guide finger **20** and passes over the reeving edge **33** at the left end notch **36** of the throat plate **28** as shown, is fed to the needles **42** and sinkers **45** at a lead angle such that it will pass over the tops **45b** of the sinkers, substantially at the said knitting point, to form successive terry, or lengthened loops, in connection with the carrying out of a single knitting wave by the needles **42**.

In this connection it is noted that prior art means have heretofore been employed to feed the yarn to the needles and sinkers as above described to effect the formation of combined plain and terry loops. However, the said prior art means is capable of such operation only when the needles are moving in one direction and it is particularly emphasized, therefore, that the yarn feeding means of my invention does not merely differ from said prior art means insofar as the structural variations are concerned, but that the means of my invention is additionally designed and arranged to effect this same result when the needles are moving in the opposite direction, or to the right, as will become clear by next referring to Figs. 8 and 9.

As there shown, rotation of the needles to the right will result in correspondingly moving the body yarn B and the terry yarn T to the right side of the throat plate **28**. When this takes place, my novel yarn feeding means will cause the body and terry yarns to be fed to the needles and sinkers in the same relationship as before, but in order that this be accomplished with the terry yarn T, it will be noted that the part **20b** of the yarn guide finger **20** is pulled or moved laterally by the terry yarn T so that the latter occupies the same relative position with respect to the reeving edge **33** and the right end notch **36**, as it did with respect to the reeving edge and the left end notch **36** when the needles were moving to the left.

It will be understood, therefore, that the angular relationship of the body and terry yarns relative to the needles and sinkers is the same irrespective whether the needles of the machine are moving to the left or right. Furthermore, that this angular relationship of the two yarns B and T relative to the said knitting elements is maintained by reason of the central location of the yarn guide aperture **34** from which the body yarn B moves to the knitting point, with respect to the two yarn guide elements or notches **36** from which the terry yarn T is fed to the same point as determined by the cooperatively associated yarn operated movable part **20b** of the yarn guide finger **20**.

Operation of invention to effect plating

When it is desired to produce a knitted fabric, such as a foot hose of the type illustrated in Fig. 13, in which certain parts are plated on the inside as previously pointed out, the novel means of my invention are arranged and operated as follows:

Assuming that the machine is set or adjusted to operate as above described so as to produce a fabric with terry loops, then the terry yarn is replaced by a suitable auxiliary or plating yarn A. Thereafter it is merely necessary to lower the latch ring **37** (in the manner previously described) to the extent necessary to bring the yarn reeving edge **33** into such relationship with the sinkers of the machine, that the angle of the plating yarn is altered or reduced sufficiently so that the same will enter the throats **45a** of the sinkers **45** at the knitting point. This will be accomplished by lowering the latch ring **37** approximately $\frac{1}{32}$ inch from the position which it occupies during operation of the machine to produce terry loops, as indicated by the dot-and-dash lines in Fig. 3.

Figs. 10 and 11 illustrate the angular relationship of the body yarn B and a plating yarn A with respect to the needles and sinkers, and the manner in which both yarns enter the throats **45a** of the sinkers **45** at the knitting point, after the latch ring has been lowered in the above noted manner. Fig. 10 shows the relationship of the parts previously described when plating takes place during movement of the needles to the left, and Fig. 11 shows the relationship of the same parts when plating takes place during movement of the needles to the right.

When operating the knitting machine to produce either the foot hose of Fig. 12, or that shown in Fig. 13, the various constituent parts thereof are, of course, formed by rotary and reciprocal knitting in accordance with the usual and well-known practice. The leg portion down to the heel pocket H is effected by rotary knitting, the heel pocket by reciprocal knitting, the foot section F between the heel pocket and the toe pocket P by rotary knitting, and the toe pocket by reciprocal knitting.

When it is desired to introduce terry loops or plating on the inside of the hose in conjunction with rotary knitting, as for example in the high splice area S, or the foot sole area F, a usual yarn guide finger **50** (Fig. 3) may be employed instead of the yarn guide finger **20**, and the latter raised to inactive position. In accordance with the well-known practice, the yarn guide finger **50**, when arranged to feed an auxiliary yarn, may be automatically operated by the standard pattern mechanism of the machine, so as to feed its yarn to the knitting elements only during that portion of rotation of the needle cylinder during which the terry or plating loops are to be combined with the plain loops effected by the body yarn. During the remainder of the course or courses so produced the finger **50** is automatically raised to inactive position by the said patterning mechanism so that the auxiliary yarn is not interknitted with the body yarn, but is merely floated across the course section produced by the latter, as well understood by those skilled in this art.

Of course, the novel improvements shown and described, may be changed and modified in various ways without departing from the invention herein disclosed and more particularly defined by the appended claims.

I claim:

1. In a machine of the character described yarn feeding means comprising, a yarn feeding finger provided with a yarn guiding tip element associated with the body of the finger so as to be freely movable relative thereto and arranged to feed its yarn to the yarn receiving means of the machine from one of a plurality of different cooperating positions as determined by the pulling action exerted thereon by the yarn when moving in one feeding direction or another.

2. In a machine of the character described, two yarn feeding devices adapted to simultane-

ously feed their yarns to the yarn receiving means of the machine while the devices are arranged in one related yarn feeding order, and means including a yarn guide element cooperatively associated with one of said devices so as to be freely movable relative thereto and responsive to a certain change in the feeding direction of the yarn guided thereby to effect a different related yarn feeding order of the devices.

3. In a machine of the character described, two yarn feeding devices adapted to simultaneously feed their yarns to the yarn receiving means of the machine while the devices are arranged in one related yarn feeding order, and means including a yarn guide element cooperatively associated with one of said devices so as to be freely movable relative thereto in such manner that a certain change in the feeding direction of the yarn guided by the movable element will effect a change in the related yarn feeding order of the devices.

4. In a machine of the character described, two yarn feeding devices adapted to simultaneously feed their yarns to the yarn receiving means of the machine while the devices are arranged in one related yarn feeding order, means including a yarn guide element cooperatively associated with one of said devices so as to be freely movable relative thereto in such manner that a certain change in the feeding direction of the yarn guided by the movable element will effect a second related yarn feeding order of the devices, and means arranged to limit the movement of said movable yarn guide element in one direction.

5. In a knitting machine, two yarn feeding devices adapted to simultaneously feed their yarns to the knitting elements of the machine while the devices are arranged in one related yarn feeding order, and means including a yarn guide element cooperatively associated with one of said devices so as to be freely movable relative thereto and responsive to a certain change in the feeding direction of the yarn guided thereby to effect a different related yarn feeding order of the devices.

6. In a knitting machine, two yarn feeding devices adapted to simultaneously feed their yarns to the knitting elements of the machine while the devices are arranged in one related yarn feeding order, and means including a yarn guide element cooperatively associated with one of said devices so as to be freely movable relative thereto in such manner that a certain change in the feeding direction of the yarn guided by the movable element will effect a different related yarn feeding order of the devices.

7. In a knitting machine, two yarn feeding devices adapted to simultaneously feed their yarns to the knitting elements of the machine while the devices are arranged in one related yarn feeding order, means including a yarn guide element cooperatively associated with one of said devices so as to be freely movable relative thereto in such manner that a certain change in the feeding direction of the yarn guided by the movable element will effect a second related yarn feeding order of the devices, and means arranged to limit the movement of the movable yarn guide element in both directions.

8. In a circular knitting machine yarn feeding means comprising, a stationary throat plate unit provided with a yarn feeding element, and a yarn feeding finger arranged in cooperative association with said unit and having a movable segmental yarn feeding member adapted to be moved by the yarn fed thereby relative to said element.

9. In a circular knitting machine yarn feeding means comprising, a stationary throat plate unit provided with a yarn feeding element, a yarn feeding finger arranged in cooperative association with said unit and having a movable segmental yarn feeding member adapted to be moved by the yarn fed thereby relative to said element, and means arranged to limit the movement of said member.

10. In a circular knitting machine yarn feeding means comprising, a stationary throat plate unit provided with a yarn feeding aperture adjacent its yarn reeving edge, and a yarn feeding finger arranged in cooperative association with said unit and having a movable segmental yarn feeding member adapted to be moved by the yarn fed thereby relative to said aperture.

11. In a circular knitting machine yarn feeding means comprising, a stationary throat plate unit provided with a yarn reeving edge and a yarn feeding aperture which is located below said edge at a point substantially centrally thereof, and a yarn feeding finger arranged in cooperative association with said unit and having a movable segmental yarn feeding member adapted to be moved by the yarn fed thereby relative to said aperture.

12. In a circular knitting machine yarn feeding means comprising, a stationary throat plate unit provided with a yarn reeving edge and an aperture below the latter which is adapted to guide a yarn to the knitting elements of the machine, a yarn feeding finger arranged in cooperative association with said unit and having a movable segmental member adapted to feed a second yarn to said elements over the reeving edge from one of a plurality of positions to which the member is arranged to be moved by its yarn in accordance with the feeding direction of the latter.

13. In a circular knitting machine yarn feeding means comprising, a stationary throat plate unit provided with a yarn reeving edge and an aperture below the latter which is adapted to guide a yarn to the knitting elements of the machine, a yarn feeding finger arranged in cooperative association with said unit and having a movable segmental member adapted to simultaneously feed a second yarn to said elements over the reeving edge from one of a plurality of positions to which the member is arranged to be moved by its yarn in accordance with the feeding direction of the latter, and means limiting the movement of the member so that the latter will come to rest at one or another of said plurality of positions.

14. In a circular knitting machine yarn feeding means comprising, a horizontally positioned stationary throat plate unit provided with a yarn reeving edge and an aperture centrally located below the latter which is adapted to guide a yarn to the knitting elements of the machine, and a yarn feeding finger vertically arranged in cooperative association with said unit and having a laterally movable segmental member adapted to simultaneously feed a second yarn to said elements over the reeving edge from one of a plurality of determined positions to which the member is arranged to be moved by its yarn in accordance with the feeding direction of the latter.

15. In a circular knitting machine yarn feed-

ing means comprising, a horizontally positioned stationary throat plate unit provided with a yarn reeving edge and an aperture centrally located below the latter which is adapted to guide a main yarn to the knitting elements of the machine, a yarn feeding finger vertically arranged in cooperative association with said unit and having a laterally swingable segmental member adapted to simultaneously feed a supplemental yarn to said elements over the reeving edge from one of a plurality of determined positions to which the member is arranged to be moved by its yarn in accordance with the feeding direction of the latter, and means limiting the movement of the member so that the latter will come to rest in a position of alignment with the main body portion of the finger or in another position.

16. A knitting machine yarn feeding device comprising, a finger-like member adapted to be pivotally mounted on a knitting machine, a yarn guide element movably associated with said member and arranged to be moved from one position to another relative to said member by the pulling action exerted thereon by the yarn in accordance with the feeding direction thereof, and

means on the device arranged to limit the movement of said element.

17. A knitting machine yarn feeding device comprising, a body member adapted to be mounted on a knitting machine, a yarn guide element movably associated with said member and arranged to be moved from one position to another relative to said member by the pulling action exerted thereon by the yarn in accordance with the feeding direction thereof, and means on the device arranged to limit the movement of said element from a position of alignment with said member to another position.

18. A knitting machine yarn feeding finger comprising two pivotally connected segmental parts one of which is adapted to be mounted on a knitting machine member and the other one of which is provided with yarn guide means and arranged to be moved from one determined position to another relative to the first of said parts by the pulling action exerted thereon by the yarn in accordance with the feeding direction thereof.

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