May 9, 1950 J. W. PHILLIPS 2,507,174

BAND TYPE KNITTING NEEDLE

Filed Nov. 23, 1946

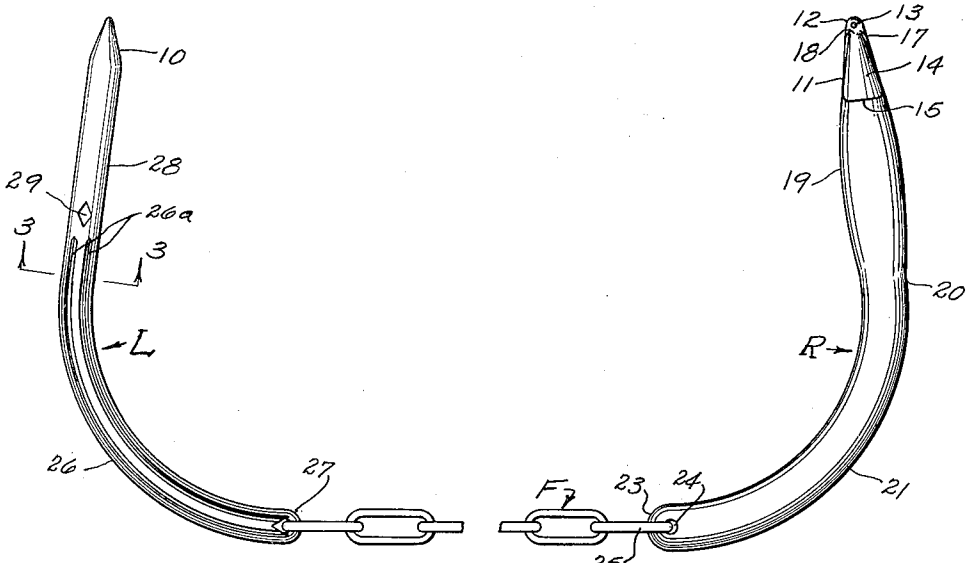


FIG. 1

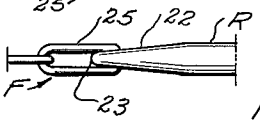


FIG. 2



FIG. 3



FIG. 6

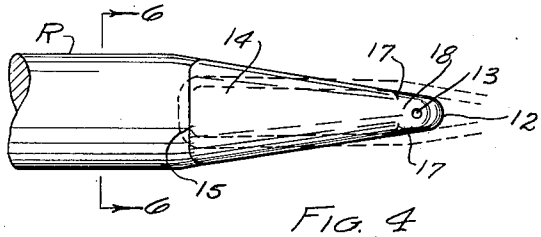


FIG. 4

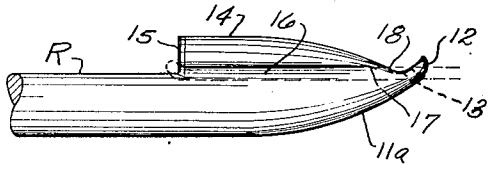


FIG. 5

INVENTOR.
JULIA W. PHILLIPS
BY WHITEHEAD & VOGL
PER Earle Whitehead
ATTORNEYS

Patented May 9, 1950 2,507,174

UNITED STATES PATENT OFFICE

2,507,174

BAND TYPE KNITTING NEEDLE

Julia W. Phillips, Denver, Colo.

Application November 23, 1946, Serial No. 711,854

17 Claims. (Cl. 66—117)

1

This invention relates to improvement in band type knitting needles for use in tubular knitting and also in those for use in flat knitting.

An object of the invention is to provide a novel tip portion for a knitting band which shall accomplish, and in a more efficient manner, all of the objects and purposes of my knitting band as disclosed in my United States Letters Patent No. 2,090,807 and to perform additional functions.

A further object is to provide, in a knitting band (or band type needle) a tip portion which will facilitate the employment of the crochet action and lessen the movements required in forming a stitch and to so form such a tip portion that it may be efficiently used in knitting a plurality of strands which are comparatively loosely associated as distinguished from a tightly wound strand.

A further object is to provide a tip portion which is usable by the crochet action and to provide a novel point for such tip portion.

A still further object is to provide a novel and improved knitting assembly, including my improved tip portion, for knitting tubular articles.

With these and other objects in view, all of which shall more fully hereinafter appear, the invention comprises certain novel constructions, combinations and arrangements of parts as will now be described and as defined in the appended claims and illustrated, in preferred embodiment, in the accompanying drawing in which

Fig. 1 is a view of a complete assembly for tubular knitting and embodying my invention.

Fig. 2 is a fragmentary view of the right hand element and the flexible connection taken at a 90 degree angle from that at which Fig. 1 is taken.

Fig. 3 is a section taken on line 3—3 of Fig. 1.

Fig. 4 is an enlarged plan view of the tip section of the right hand element, a thread or strand or strands of yarn being shown in broken lines in position as engaged by my improved tip section.

Fig. 5 is a side view of the tip section illustrated at Fig. 4.

Fig. 6 is a view partly in section and partly in elevation taken on line 6—6 of Fig. 4.

This invention pertains particularly to the band type of knitting needle which is approximately oval in cross section, as indicated at Figs. 3 and 6 and also by comparison of Figs. 4 and 5, and will be herein referred to as "band." The invention, in the first place, provides a novel and improved tip portion for such a band whether it be a straight complete knitting band or a part of an assembly adapted for tubular work as illustrated at Fig. 1 which shows a band with my improved tip portion. Figs. 4, 5 and 6 are enlarged views of the tip portion, which portion is the same in both the band for tubular knitting and the straight band for flat work.

2

The invention will be first described in terms applicable to the tubular knitting type as illustrated at Fig. 1. This comprises a right element R and a left element L and a flexible connecting member F. The tip portions of the elements R and L are the same whether they be on straight bands for flat knitting or incorporated in the assembly for tubular knitting as illustrated at Fig. 1. The element L may have any ordinary tip such as that illustrated at 10, being a taper with rounded or dulled point to lessen the danger of splitting threads or strands or causing injury to the operator. The band designated as element R is tapered, as at 11 at Fig. 1 (also illustrated at Fig. 6) and the point 12 is rounded as clearly seen at Figs. 1 and 4 and is slightly upturned or "shovelled" as clearly seen at Fig. 5, and is preferably provided with an orifice 13 through which a decorative thread may be passed and thus, in the course of the knitting, be incorporated into the knitting.

The underside of the tapered tip portion 30 is also tapered on a curved line, as at 11a, terminating and converging into the back or under side of the shovel point, all as clearly seen at Fig. 5. The top of the tapered portion 11 is surmounted by a member 14 of approximately arrowhead shape whose base or broad end rises vertically from the band as at 15 but between whose edges and the band, slots or grooves 16 are provided for accommodation of threads or strands as indicated by the dotted lines at Figs. 4 and 5. These slots or grooves grow progressively shallower from base to tip of the arrowhead until, at the tip of the head, they merge into the surface of the band just back of the base of the shovel point 12 as at 17. The arrowhead also tapers from base to front end where its point merges with the surface of the band at the base of the shovel point as at 18.

When used in the assembly for tubular knitting, the element R is preferably enlarged as indicated (and exaggerated) at 19, to the rear of which enlargement the element is reduced to normal size as at 20 and therebehind curved as at 21 and thereafter tapered as at 22 to a comparatively thin, rounded edge 23 and provided with orifice 24 for engagement with a link or loop 25 of the flexible connection F. The element L has a smaller circumference than the element R but, like element R, is a band and curves at 26, which

curve continues from its junction with the flexible element at 27 to, and merges into, the straight portion 28 of element L. This curved portion of the element L is preferably provided with grooves or flutings 26a to lessen the friction of the stitches as they slide along the element and thereby facilitate such sliding. The straight portion 28 of element L may be provided with an orifice, preferably diamond shaped such as 29, through which may be drawn a thread or strand for ornamental purposes or for maintaining the stitches intact while the band or needle is removed from the knitting for the measuring of the garment being knitted.

The element F is illustrated as a chain but it may be made in various forms so long as flexibility and smoothness of surface are maintained. This element should be at least as small as the end of element R with which it is engaged so as not to impede the sliding of the stitches from element R onto element F. Likewise, and for similar reason, element L should not be larger than element F. Each stitch, as it is formed over the tip portion of element R, is loose so that it will stretch, as necessary, to a sliding fit on the tip portion and will therefore stretch to the size sufficient to slide over enlarged portion 19 and as it passes that portion of the tip it will contract slightly but not sufficiently to impede its sliding along the smaller portion 20 of element R and thence, as the knitting proceeds, onto and across the flexible element F and onto and along element L. This facilitation of the movement of the stitches along these elements speeds up the knitting operation as it makes it unnecessary to stop the knitting in order to move the stitches along the elements, as is necessary when the elements are of uniform size throughout and the stitches have a tight fit thereon. The flutings 26a further lessen the friction and facilitate the sliding of the stitches along element L as well as furnishing air spaces within the stitches and thereby avoiding the accumulation on element L of perspiration from the hand of the operator. The high degree of flexibility of the chain and its loose linking to the bands in the manner illustrated at Figs. 1 and 3 and as above described allows complete freedom of manipulation of the elements R and L in the knitting operation and facilitates tubular knitting even with straight bands.

The illustrated and above-described shape of the rounded, shovelled point 12 greatly facilitates the engaging of a thread with and by the point while avoiding the splitting of the thread or strands even when very loosely associated strands constitute the thread which is being knitted. When the stitch or loop has been engaged by the point it easily slides over the arrowhead, because of its above-described shape, until it drops down behind the base of the arrowhead whereupon the element R is drawn backward and the loop or stitch engages the base of the arrowhead and the sides of the loop naturally position themselves in the grooves 16, being then in the position indicated by the dotted lines at Figs. 4 and 5. The distance from the base 15 to the orifice 13, which is adjacent the base of the shovel point, is the length of the stitch. The arrowheads and the bands vary in size according to the kind of knitting product desired, so that when the desired length of stitch for such product is ascertained, a band with a head of the desired length is selected and the use of such band with such head will produce, with accuracy, the stitch desired for the work desired.

To those skilled in the art it will be obvious that the arrow-headed band with the shovelled point, as above described and as illustrated in the drawing, will not only facilitate the knitting operation in the ways hereinabove pointed out, but will, furthermore, reduce the movements of element R in forming a stitch from five movements to three movements, thus greatly speeding up the operation while assuring accuracy and avoiding the difficulties attending efforts to knit with multiple strand threads by needles or like equipment now in use. Other advantages of the construction illustrated and described will be obvious to those skilled in the art and need not be here enumerated.

It will also be obvious that, when flat knitting is to be done, straight bands, having tip portions like those illustrated and described above, may be used with the same results, as regards the formation of the stitch, as those hereinabove described and indicated.

While I have illustrated and herein described many details of construction, I am not to be restricted to such details but am to be protected as to those alternatives and equivalent structures which will occur to those skilled in the art and within the spirit of the foregoing disclosure and scope of the appended claims.

I claim:

1. A knitting band having an arrow-head-shaped member mounted on a face of its tip portion and thread-receiving grooves along and between the edges of the band and the edges of the member.

2. In a knitting band as defined in claim 1, the central portion of the base of said member rising from and perpendicular to the plane of the face of the band.

3. In a knitting band as defined in claim 1, an upwardly curving, flattened and round edged point of the band immediately forward of the point of the arrowhead.

4. In a knitting band as defined in claim 1, an upwardly curving, flattened and round edged point of the band immediately forward of the point of the arrowhead and a thread-receiving orifice through said upturned point near the base thereof.

5. An implement for knitting tubular articles comprising, in combination, a right hand knitting band having a straight portion, including the knitting point, and a curved rear portion, a flexible connection of smaller circumference than said band, a second knitting band having a straight portion including the point and a curved rear portion not larger in circumference than said flexible connection, orifices at the rear ends of said bands, said flexible connection being loosely linked through said orifices.

6. In an implement as defined in claim 5, the straight portion of the right hand band having an enlargement immediately back of its knitting point portion and being thereafter reduced in size.

7. In an implement as defined in claim 5, said flexible connection comprising a chain loosely linked to the termini of the curved portions of the bands through said orifices.

8. In an implement as defined in claim 5, the right hand band being tapered to a flat, rounded end at the terminus of its curved portion.

9. In an implement as defined in claim 5, the

curved portion of the left hand band having a fluted surface.

10. An implement for knitting tubular articles comprising, in combination, a right hand knitting band having a straight portion, including a tip portion having an arrowhead-shaped member mounted on its upper face, and a curved rear portion, a flexible connection of smaller circumference than said band, a second knitting band having a straight portion including a knitting point and a curved rear portion not larger in circumference than said flexible connection, said flexible connection being loosely linked to the termini of said bands.

11. In an implement as defined in claim 10, thread-receiving grooves along and between the edges of the right hand band and the edges of the member.

12. In an implement as defined in claim 10, the central portion of the base of said member rising from and perpendicular to the plane of the face of the right hand band.

13. In an implement as defined in claim 10, an upwardly curving, flattened and round-edged point of the right hand band immediately forward of the point of the arrowhead-shaped member.

14. In an implement as defined in claim 10, an upwardly curving, flattened and round-edged point of the right hand band immediately forward of the point of the arrowhead-shaped member and a thread-receiving orifice through said upturned point near the base thereof.

15. An implement for knitting tubular articles comprising, in combination, a right hand knitting band, a flexible connecting member of less circumference than said band, a second knitting band having a circumference no larger than said member, said flexible connecting member being engaged to and connecting together the ends of said two bands.

16. In a knitting implement as defined in claim 15, said right hand band being tapered to a flat rounded rear terminus.

17. In a knitting implement as defined in claim 16, an orifice in said rear terminus.

JULIA W. PHILLIPS.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,043,958	Engel	June 9, 1936
2,090,807	Phillips	Aug. 24, 1937
2,093,631	Burnham	Sept. 21, 1937

FOREIGN PATENTS

Number	Country	Date
173,618	Great Britain	Jan. 6, 1922
720,844	France	Dec. 12, 1931
765,590	France	Mar. 26, 1934