June 29, 1948. A. C. KENDIG ET AL 2,444,102

KNITTING NEEDLE

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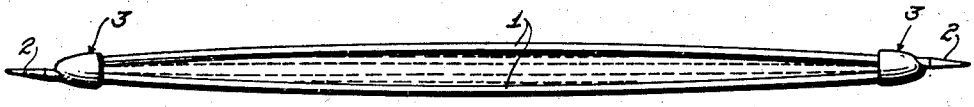


FIG. 1

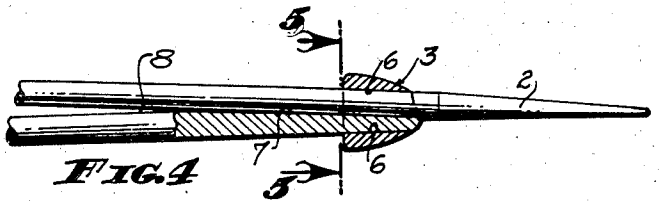


FIG. 4

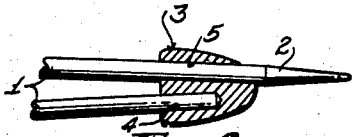


FIG. 2

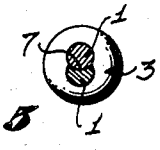


FIG. 5



FIG. 3

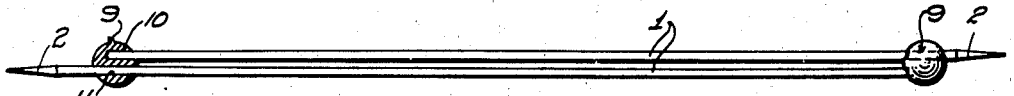


FIG. 6



FIG. 7

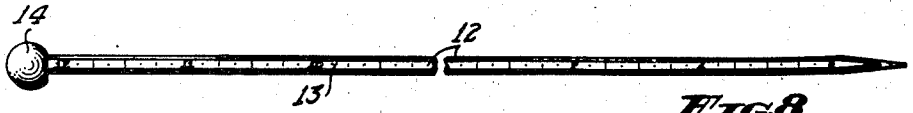


FIG. 8

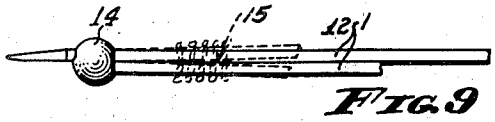


FIG. 9

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KNITTING NEEDLE

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6 Claims. (Cl. 66—117)

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Our invention relates to knitting needles, and among the objects of our invention are:

First, to provide a knitting needle having an eccentrically disposed head in which is provided an extra opening therein adapted to receive a mating knitting needle so that when not in use the two knitting needles may be joined together.

Second, to provide a knitting needle wherein the members of a pair of needles are adapted to interlock with each other and prevent the knitting from slipping off the needles when the knitting is put away or being carried.

Third, to provide a knitting needle the head of which, although self-locking is particularly compact and in no manner will interfere with knitting.

Fourth, to provide a knitting needle which incorporates a scale for measuring the length or width of the piece being knitted.

With the foregoing and other objects in view as may appear hereinafter, reference is directed to the accompanying drawings in which:

Figure 1 is a side view of a pair of knitting needles embodying our invention, indicating by solid lines the normal shape taken when the point of each needle is thrust into the head of the other and showing by dotted lines the position taken when the knitting is divided on the needles or wrapped about the needles for storage or transportation.

Figure 2 is an enlarged detail sectional view through the head of one of the needles showing the point of the other needle in position.

Figure 3 is a fragmentary perspective view of one of the needle heads.

Figure 4 is an enlarged fragmentary sectional view of a modified form of our knitting needles showing the needles joined together.

Figure 5 is a transverse sectional view taken through 5—5 of Figure 4 showing the head in elevation.

Figure 6 is a side view of a further modified form of our knitting needle, showing a pair interconnected.

Figure 7 is also a side view of the knitting needles shown in Figure 6, but showing the needles twisted to form an interlocking connection.

Figure 8 is a top view of a further modified form of our knitting needle wherein one side is flattened and a scale imprinted thereon.

Figure 9 is a fragmentary side elevational view showing a pair of the needles represented in Figure 8 interlocked.

Our knitting needles may be formed of metal

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or plastic, or even wood. Each knitting needle includes a shaft 1 having a pointed end 2, and at its opposite end a head, indicated generally by 3.

In the construction shown in Figures 1, 2, and 3, the head 3 may be rounded in form with a flat end. Entering the head from its flat end is a socket 4 and a hole 5. The socket and hole are offset substantially equal distances either side of the axis of the head and preferably converge. The unpointed end of a shaft 1 is secured in the head by any suitable means. Thus the head is eccentrically disposed on its shaft.

The hole 5 of one needle head is adapted to receive the pointed end of the other needle shaft, and, by reason of the converging relation on the socket 4 and hole 5 the shafts of the two needles are caused to bend slightly as shown by solid lines in Figure 1 and consequently the shafts tend to bind in their holes 5. Thus, when the two needles are joined together as shown in Figure 1 they are frictionally held together, so that any knitting carried on one or both needles is prevented from slipping off the ends. Furthermore, inasmuch as the needles may be joined together they remain as a unit when put away and not in use, rather than two separate articles each useless without the other.

The frictional grip between the knitting needles may be increased if the central portions of the shafts are forced toward each other as indicated by dotted lines. This tends to be the case when the knitting is divided between the two needles, and may be augmented by wrapping the knitting about the needles.

Reference is now directed to Figures 4 and 5. In this construction the head 3, in place of having separate socket 4 and hole 5, is provided with an opening 6 which is substantially "hour glass" or figure 8 in cross section. The major width of the opening 6 may taper into the head 3. The unpointed end of each needle is provided with a groove 7 in one side deepening as it approaches the extremity of the needle. This end of the needle is secured in one side of the opening 6 and the groove 7 defines with the remaining portion of the opening a circular hole adapted to admit the pointed end of the companion needle.

Thus, the extremities of the two needles converge as in the case of the construction shown in Figure 1 and a similar frictional engagement obtains. In some respects advantages are gained; namely, the head shown in Figure 4 may be smaller in diameter than in the construction shown in Figure 1. Also, a wedge space 8 is

formed between the needles into which the loops of knitting may be forced to increase the locking action.

Reference is now directed to Figures 6 and 7. Here a spherical head 9 is shown, although the head may take the form of the head 3, and conversely the head 3 may be spherical. In fact, the shape of the head may be varied considerably for design reasons without interfering with its function.

The head 9 is provided with a socket 10 for receiving the unpointed end of the needle shaft, and a hole 11 for the pointed end of the other needle. In this construction the socket 10 and hole 11 are shown as parallel; thus, the two needles readily slip axially one into the other and do not lock when the shafts are parallel as shown in Figure 6. By twisting the two shafts about each other from a half to a full turn depending upon their initial spacing and the presence or extent of knitting, the two needles are securely locked in position. The locking effect is such that the needles will not unlock with ordinary handling.

It should be pointed out that the inter-locking action of the constructions shown in Figures 1 and 4 may be increased by twisting as shown in Figure 7.

Reference is now directed to Figures 8 and 9. Here each knitting needle shaft 12 is provided with a flattened side 13 which may bear a scale printed, embossed, or pressed therein. The head 14 may be similar to the head depicted in Figures 4 and 5; that is, an opening of figure 8 cross section may be provided which conforms to the composite cross section of the shafts 12 when laid with their flat sides contiguous. With this construction, the loops of knitting indicated in dotted lines by 15 wedge the shafts apart to secure them together and bind the pointed ends in their sockets.

While, in the various constructions, the heads are shown as attached to the needle shafts, it is contemplated that these two members may be molded integrally. If the heads and shafts are separate members, they may be secured by any suitable bonding means, as by an appropriate plasticizer if they are made of plastics; or by soldering or mere press fit if formed of metal; or a screw-threaded connection may be employed. In any case, a rigid and permanent connection is desired.

It will be observed that the tapered groove 7 employed in the construction shown in Figures 4 and 5, and the flat sides 12 provided in the construction shown in Figures 8 and 9 serve to guide the pointed end of the mating needle into its hole so that the needles are readily joined together.

Also, it will be observed that in all the construction shown a biasing strain is applied to the pointed ends of the needles tending to bind them in their respective holes.

Although we have shown and described certain embodiments of our invention, we do not wish to be limited thereto but desire to include within the scope of our invention the various embodiments embraced in the appendd claims.

We claim:

1. A knitting needle, comprising: a shaft pointed at one end; a head eccentrically disposed on the unpointed end of said shaft and having a passage through its offcenter portion contiguous to one side of said shaft, the axis of said passage converging toward the shaft in the direction of its unpointed end; said passage adapted to receive the pointed end of a mating knitting needle shaft whereby a pair of said needles are joined by their ends, with the shafts tending to bow outwardly from each other by reason of the converging axis of each passage and exert a biasing strain tending to bind the shafts in their respective passages.

2. A knitting needle comprising: a needle shaft pointed at one end; a head for the other end of said shaft, said head having an opening therein, the axis of which is in angular relation to the axis of said shaft whereby, when a pair of said needles is assembled with the pointed end of one needle in the opening of the other, the walls of said opening exert a biasing strain on said needle tending to secure the needle shaft therein.

3. A knitting needle comprising: a needle shaft including a shank of uniform diameter and a pointed end; an elongated rigid head for the unpointed end of said shaft, said head having an opening offset from and in non-parallel relation to the axis of said shaft, said opening adapted to receive the pointed end and engage the shank of a mating needle shaft, the walls of said opening exerting a biasing strain thereon tending to secure said mating needles together.

4. A knitting needle, comprising: a shaft pointed at one end; a head eccentrically disposed on the unpointed end of said shaft and defining an opening therein at one side thereof, said opening adapted to receive slidably the shank of a mating needle, the axis of said opening being so angularly disposed that, when a pair of needles are assembled, their shafts tend to bow outwardly from each other thereby exerting a biasing strain tending to bind the shafts in their respective openings.

5. A pair of knitting needles each having a pointed end and a headed end, each headed end defining means for receiving the pointed end of the other needle, said means being so angularly related to the axis of the shaft it receives that said shafts tend to bow outwardly from each other and exert a biasing strain tending to bind said shafts in said means.

6. A knitting needle, comprising: a knitting needle head defining a pair of openings disposed to non-parallel relation; and a needle shaft secured in one of said openings, the other opening adapted to slidably receive a mating needle shaft and exert a biasing strain thereon tending to retain said shaft therein.

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