Sept. 28, 1948. H. J. D. WOLFF 2,450,067

KNITTING DEVICE

Filed March 25, 1946

Fig. 1

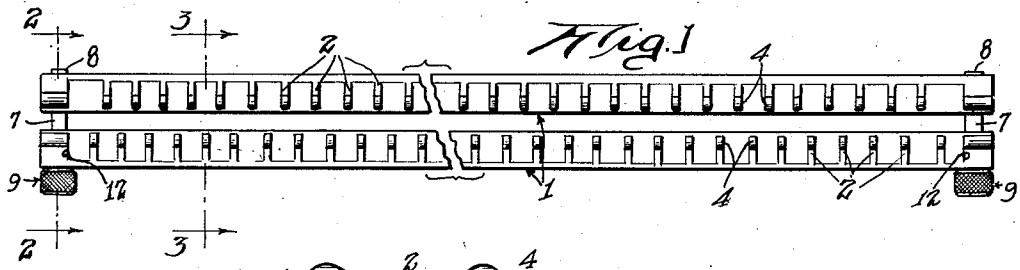


Fig. 2

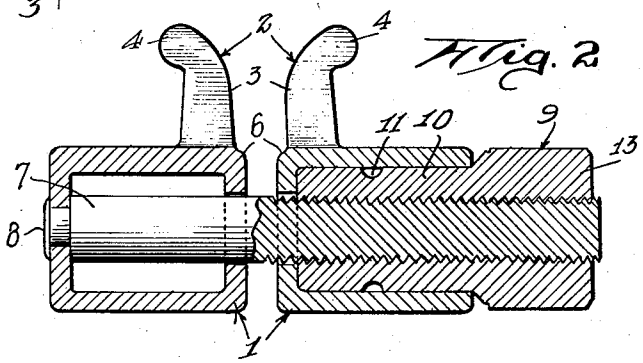


Fig. 3

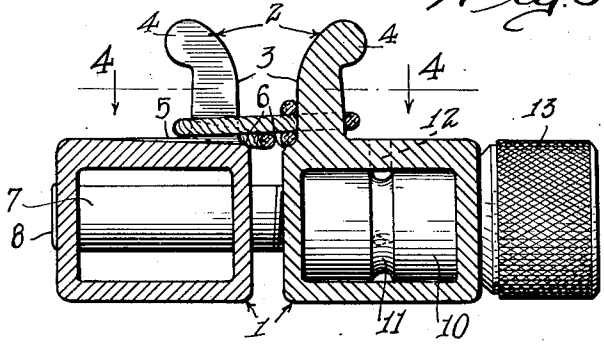


Fig. 4

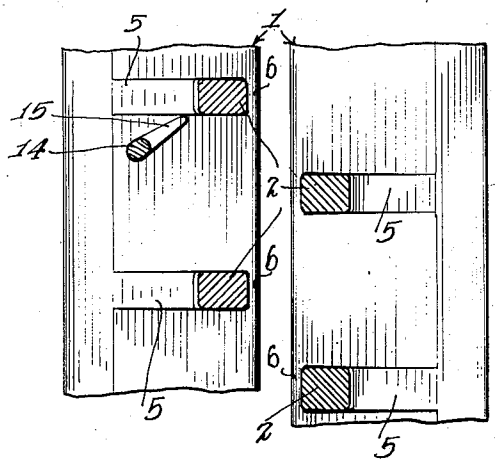
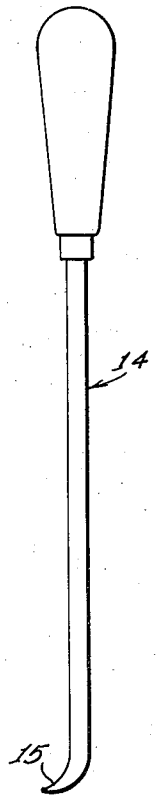


Fig. 5



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KNITTING DEVICE

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5 Claims. (Cl. 66—4)

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My invention relates to knitting or weaving devices of the type wherein two rows of fingers are provided in parallel bars and weaving or knitting is effected by looping the yarn over the fingers in various patterns and causing the finished work to pass between the bars.

As its primary object my invention is intended to provide a knitting device having improved knitting fingers which facilitate the formation of a uniform weave and which enables the knitting process to be carried on with minimum visual attention, thus providing a device which is particularly suitable for use by physically handicapped persons, or those whose eyesight is impaired.

Another object is to provide a knitting or weaving device in which the knitting fingers and bars which carry them are integral, and which may, in fact, be formed from extruded metal, preferably aluminum, so as to provide a light weight but strong tool.

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

Figure 1 is a fragmentary plan view of my knitting device.

Figure 2 is an enlarged transverse sectional view through 2—2 of Fig. 1, showing particularly the means for adjusting the spacing between the finger bars.

Figure 3 is another enlarged transverse sectional view through 3—3 of Fig. 1, indicating partially the manner in which stitches are looped over the knitting fingers.

Figure 4 is an enlarged fragmentary sectional view through 4—4 of Fig. 3, illustrating the manner in which the knitting fingers are disposed at the extremities of rudimentary ribs, which facilitate the removal of the stitches as the knitting or weaving progresses.

Figure 5 is an elevational view of a typical hand tool employed with my knitting device to remove the stitches from the knitting fingers.

A pair of finger bars 1 is provided which are preferably in the form of extrusions of hollow rectangular cross-section. Each finger bar is provided on its upper side near one vertical wall with a series of knitting fingers 2. Each series of knitting fingers 2 is integral with its finger bar 1 and, initially, is in the form of a single continuous rib forming a part of the extrusion. The individual fingers are formed from said rib by milling the rib crosswise.

Each knitting finger 2 comprises a tapered shank 3, one edge of which is essentially parallel

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to but offset a slight distance back of the adjacent vertical side of the finger bar. This side of the shank curves inwardly over the finger bar and the upper end of the shank terminates in a semicircular offset head 4, which before milling the rib is in the form of a continuous bead.

Each knitting finger is disposed on a rudimentary ridge 5 extending transversely on the upper side of the finger bars. The ridges 5 are formed simultaneously with the milling operation which separates the knitting fingers by causing the milling cutter to cut below the normal upper surface of the finger bar. The adjacent upper corner of each bar is so extruded that it coincides with the milled surface of the finger bar between the ridges 5 rather than the normal upper surface of the bar and forms a rudimentary depressed shoulder 6.

When the knitting bars are placed in parallel spaced relation with their knitting fingers at the adjacent sides of the finger bars, the knitting fingers extend upwardly and curve away from each other, as represented best in Figs. 2 and 3. The finger bars are held in adjusted spaced relation by means of connecting shafts 7. A pair of these shafts is secured at 8 adjacent the extremities of one of the finger bars and extends through appropriate openings in the other finger bar. The extremities of the shaft 7 are threaded in the screw members 9, having shanks 10 which are journaled within their corresponding finger bar and are held in place by means of a groove 11 and are intersected by tangentially disposed retainer pins 12 through the finger bar 1. The protruding portion of the members 9 have knurled heads 13.

The shape of the knitting fingers is of primary importance; for, by reason of the diverging relationship between the adjacent surfaces of these fingers and the offset disposal of the heads 4, the knitting operation is greatly facilitated; that is, the loops of yarn may be readily drawn over the finger bars and retained by the heads. In a succeeding step of the knitting operation the loops are removed by a hand tool 14. The hand tool itself is conventional but is illustrated in order to explain the function of the ridges 5. The end of the hand tool is formed into a curved and tapered hook 15 which is adapted to ride along either side of the shoulder formed by ridges 5 and slip under a loop of yarn so that the loop may be raised around the offset head 4 and off of the knitting fingers. By reason of the guiding action afforded by the ridges 5, the step of removing the completed stitches is greatly

facilitated, and in fact may be carried on with little or no visual act, thus enabling the knitting device to be used by physically handicapped persons, or those whose sight is impaired.

It will be observed that the knitting fingers are extremely close to the adjacent side of the knitting bar, which facilitates the step of drawing the stitches tight after being formed by pulling downward on the finished cloth which extends between the finger bars.

Applicant is aware of the fact that previous knitting devices intended to accomplish the same purpose as the device herein described, have been made. These, however, comprised wooden finger bars in which a series of nails or screws were placed along the bars, which has proven to be a tedious and expensive method of construction; some fifty fingers being provided in each bar. Furthermore the shape of these fingers is much inferior to the shape which applicant has found by experimentation to be eminently satisfactory. Quite apart from this, however, applicant has found that by extruding each finger bar and its series of knitting fingers as a single extrusion having the cross-section depicted in Figs. 2 and 3, the intervening material between the knitting fingers may be milled quickly and economically. It is then merely necessary to buff the fingers by a longitudinal movement with respect to the finger bars to finish the corners of the knitting fingers.

Although there has been described a specific embodiment of the invention, it is to be understood that various modifications may be made therein without departing from the spirit of the invention or the scope of the appended claims.

I claim:

1. A knitting device, comprising: a pair of opposed and spaced finger bars; sets of integral upstanding fingers spaced in staggered relation along the confronting upper margins of said bars, said fingers including upwardly tapering shanks, the upper portions of the shanks of the opposed sets of fingers curving away from each other and terminating in rounded head elements on their remote sides.

2. A knitting device, comprising: a pair of opposed and spaced finger bars, sets of integral upstanding fingers spaced in staggered relation along the confronting upper margins of said bars, the confronting sides of the fingers of each set curving away from the fingers of the other set and terminating in stitch retaining head elements on their remote sides, and means for securing said bars in adjustable spaced relation with each other.

3. A knitting device, comprising: a pair of opposed and spaced finger bars, the upper surfaces of said bars having rudimentary sets of transversely extending staggered ridges, and integral upstanding knitting fingers at the adjacent extremities of said sets of ridges, said ridges forming with said bars guide shoulders along the sides of said knitting fingers and continuing therefrom partially across said finger bars.

4. A knitting device, comprising: finger bars, the upper surfaces having a plurality of integral upstanding knitting fingers; and integral ridges equal in width to said knitting fingers extending from the base ends thereof partially across said bar to form guide shoulders for a pointed tool when said tool is moved across the bar and alongside said fingers.

5. A knitting device, comprising: finger bars, the upper surfaces having a plurality of integral upstanding knitting fingers; and integral ridges equal in width to said knitting fingers extending from the base ends thereof partially across said bar to form guide shoulders for a pointed tool when said tool is moved across the bar and alongside said fingers, each of said fingers curving upwardly and over said finger bar and having heads overhanging said ridges.

HARRY J. D. WOLFF.

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