

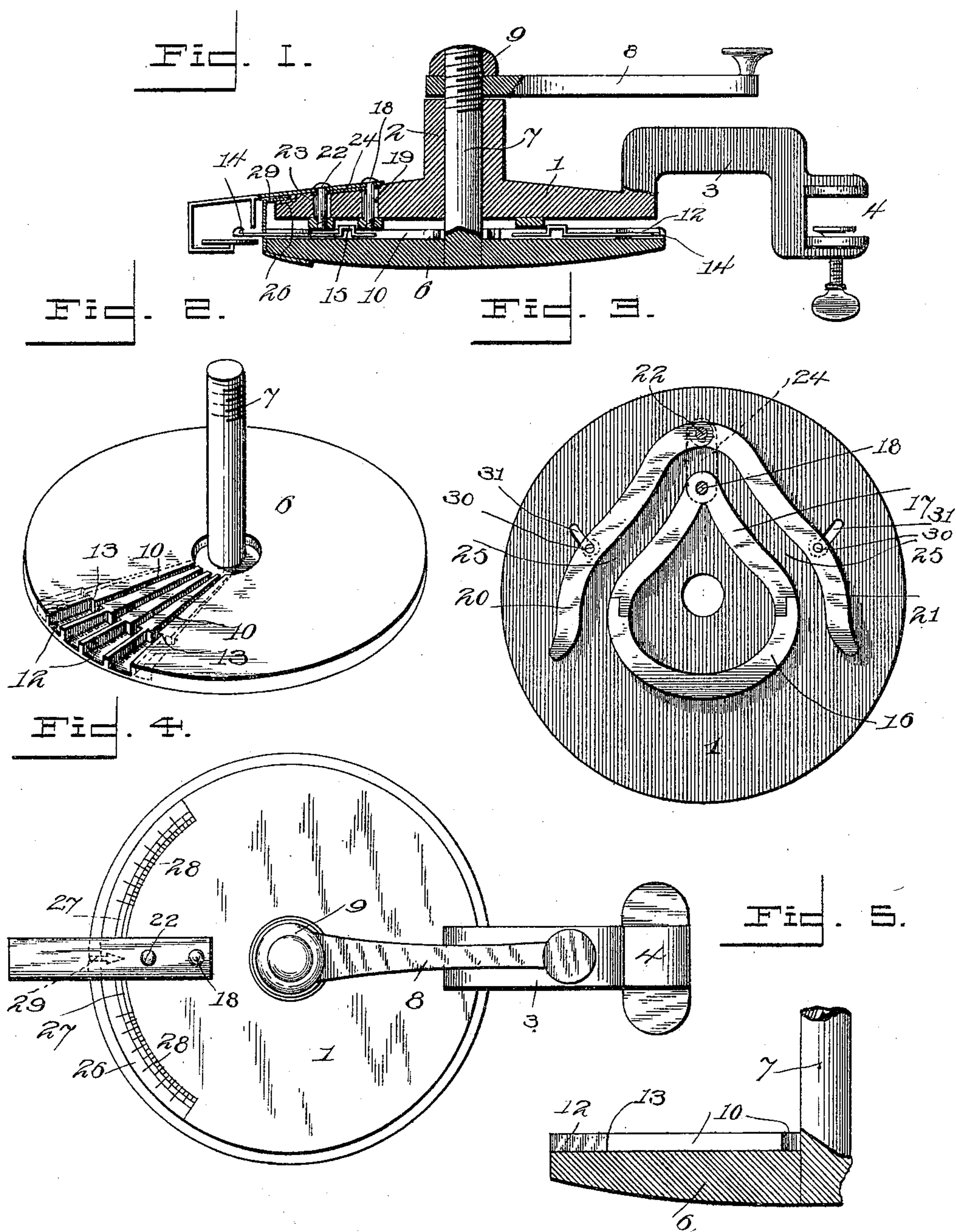
No. 611,751.

Patented Oct. 4, 1898.

L. GEARHART.
CIRCULAR KNITTING MACHINE.

(Application filed Jan. 27, 1898.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

LEWIS GEARHART, OF LAWRENCE, PENNSYLVANIA, ASSIGNOR TO DANIEL F. WISOTZKEY, OF CLEARFIELD, WILLIAM C. DAVIS, OF HOUTZDALE, AND CHARLES L. ZIMMERMAN AND W. L. SHEETS, OF McKEESPORT, PENNSYLVANIA.

CIRCULAR-KNITTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 611,751, dated October 4, 1898.

Application filed January 27, 1898. Serial No. 668,145. (No model.)

To all whom it may concern:

Be it known that I, LEWIS GEARHART, a citizen of the United States, residing at Lawrence township, in the county of Clearfield and State of Pennsylvania, have invented certain new and useful Improvements in Circular-Knitting Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in circular-knitting machines; and the object is to simplify the construction and increase the efficiency of the machine.

To these ends the invention consists in the construction, combination, and arrangement of the device, as will be hereinafter more fully described, and particularly pointed out in the claim.

The accompanying drawings show my invention in the best form now known to me; but many changes in the details might be made within the skill of a good mechanic without departing from the spirit of my invention as set forth in the claim at the end of this specification.

The same reference characters indicate the same parts of the device in the several views.

Figure 1 is a longitudinal section of my improved knitting-machine. Fig. 2 is a perspective view of the needle-carrying disk. Fig. 3 is a bottom plan view of the cam-dial and the adjustable cam-tracks. Fig. 4 is a top plan view of the machine. Fig. 5 is an enlarged section of the needle-dial, taken through one of the radial grooves.

1 denotes the cam-dial, formed with an integral axial hub 2 and a radial arched arm 3, terminating in a screw-clamp 4 for conveniently attaching the machine to the projecting edge of a table or other suitable support.

6 denotes the needle-dial, formed with a vertical axial shaft 7, journaled in the hub 2 and threaded at its upper projecting end to receive the crank-handle 8 and lock-nut 9.

10 10 represent the radiating needle-grooves formed in the upper face of the dial 6 and communicating at their outer ends with the

enlarged recesses 12 12, centrally alined with the needle-grooves. This needle-dial and its shaft are of novel construction, the shaft being first finished and inserted in proper position in the needle-mold and the dial cast about the shaft of Babbitt metal, the needle-grooves and recesses being formed by the mold at the time of casting. This produces a dial which is at once perfect and complete and possesses many advantages over the usual form of iron dial, which is cast solid and the radial grooves milled out afterward, the milling-tool necessarily leaving the angles of the shoulders between the recesses and the grooves quite acute, which form a cutting edge and sever the thread or yarn when the loop is drawn by the needle into the recesses 12 12, whereas by casting the dial with the grooves the shoulders 13 are square, and consequently do not chafe the thread.

14 denotes one of the needles, each of which is formed with a toe 15, as shown.

16 represents a semicircular guide-rail fixed to the under side of the stationary dial 1, concentric with the shaft 7, and its ends are rabbeted to form sliding joints with the adjacent and correspondingly-rabbeted ends of the heart-shaped rail 17, the apex of which is secured to a screw-bolt 18, which extends through a radial slot 19 in the dial 1.

20 21 denote curved rails corresponding to the contour of the heart-shaped rail 12, and their contiguous ends are pivoted on the bolt 22, which extends through a radial slot 23 in the dial 1.

24 represents a plate which connects the bolts 18 and 22, so that the rail 17 and the rails 20 21 may be simultaneously adjusted for the purpose of lengthening the groove 25, formed between them and which receives the toe 15 of the needles, forming a guide therefor and determining the movement of the needle-stroke and thereby permitting the employment of various-sized needle-dials.

26 denotes a scale-plate fixed to the top of the stationary dial 1, and it is provided with a blank space 27, and on each side of the blank space a numerical scale 28 extends in opposite directions, as shown.

29 represents a pointer fixed to the needle-

dial and having its free end traversing said scale, so that after the leg of a stocking is formed the heel is formed by bringing the pointer 29 to the center of the blank space 5 and the needle-dial oscillated to the right and left the proper distance along the scales to widen or narrow the heel, as desired.

The outer ends of the curved rails 20 21 are provided with guide-bolts 30 30, which are 10 adjustably secured in the curved guide-slots 31 31 in the dial 1, whereby said rails may be adjusted to lengthen and shorten the stitch.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is— 15

A circular hand-knitting machine comprising the cam-dial 1 formed with a screw-

clamp 4, the semicircular guide-rail 16, the heart-shaped rail 17 adjustably secured to said dial, the curved rails 20 21 having their 20 contiguous ends pivoted to said dial, and the plate 24 connecting said rails 17 20 and 21, so as to simultaneously adjust them, in combination with the needle-dial 6 formed with the shaft 7 journaled in said dial 1, and having 25 the radiating needle-grooves 10, substantially as shown and described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

LEWIS GEARHART.

Witnesses:

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