

Nov. 4, 1930.

E. U. AMES

1,780,328

KNITTING MACHINE

Original Filed March 19, 1926

Fig. 1.

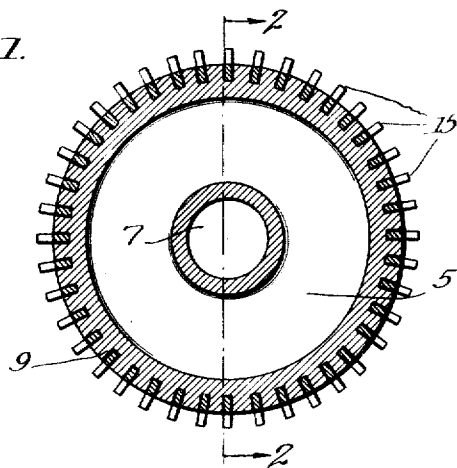


Fig. 2.

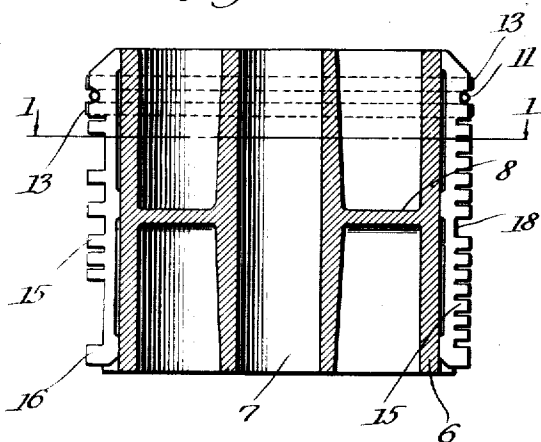
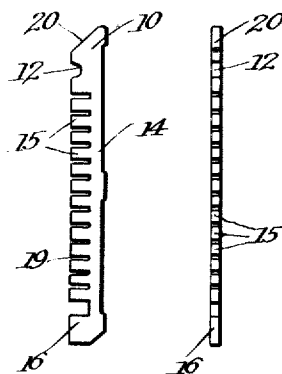


Fig. 3. Fig. 4.



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UNITED STATES PATENT OFFICE

ELMER U. AMES, DECEASED, LATE OF COLLINGSWOOD, NEW JERSEY, BY CAROLINE F. AMES, ADMINISTRATRIX, OF HADDONFIELD, NEW JERSEY

KNITTING MACHINE

Original application filed March 19, 1926, Serial No. 96,049. Divided and this application filed April 26, 1930. Serial No. 447,694.

This application is a division of application Serial No. 352,503, filed April 4, 1929 and of application Serial No. 96,049, filed March 19, 1926 now Patent No. 1,722,989 August 6, 1929.

This invention relates to a pattern mechanism of extreme flexibility in the setting up of designs for knitting machines. The device is capable of use for the purpose of controlling the needles of the machine and any other instrumentalities of the machine upon which a control action is desired to vary the fabric knit by the machine. A more complete setting forth of the advantages of this device is contained in the above mentioned applications.

Referring to the accompanying drawings which are made a part hereof and on which similar reference characters indicate similar parts,

Fig. 1 is a cross section of the trick wheel on line 1—1 of Fig. 2,

Fig. 2 is a cross section of the trick wheel on line 2—2 of Fig. 1,

Fig. 3 is a side view of a single trick, and Fig. 4 is an edge view thereof.

In the drawings the cylindrical trick wheel is indicated at 5 having the walls 6 and the hollow central hub 7 connected to the walls 6 by the web 8. Slots 9 are cut or otherwise formed in the wall 6 to provide a means for placing interchangeable tricks 10 in position on the wheel the slots being preferably radial with respect to the axis of the wheel, as here shown. In a preferred embodiment of the invention the tricks 10 are secured around the wheel in the slots thereof as shown in Fig. 1 though obviously they may be of other form and held in place in other ways. The tricks are held in position on the wheel by means of the spring band 11 which is placed on the wheel to engage the curved slots 12 of the tricks and to engage in a circumferential groove between the two annular ribs 13 adjacent the top of the trick wheel 5 and integral therewith.

Each trick may comprise an elongated strip-like body member 14 preferably punched out of any suitable material; e. g. sheet metal of suitable strength such as steel

and provided with a plurality of frangible butts or projections 15 arranged lengthwise thereof, the butts being here shown as extending from an edge of the member 14 and lying in the plane of the body of said member. These butts are made sufficiently strong to provide the desired operation in the machine and yet are of such construction that the butts may be broken out as desired as shown at 18 in Fig. 2, the breaking out of the butts being done by any suitable operation which removes substantially the entire butts at once, in accordance with the desired design to be made on the instrumentalities which are controlled by means of the trick or pattern wheel element. The butts 15 are made by subjecting the trick blank having a full complement of selective operating points to an operation which makes saw cuts 19 crosswise of the trick, the butts then being between successive saw cuts and substantially identical and substantially equally spaced. As another instance of a pattern element reference is had to the pressers or sub-jacks disclosed in Ames application 25,915, filed April 25, 1925 in the U. S. Patent Office, where the pressers lie in the needle slots of a knitting machine said pressers being made in the same way as the tricks. The active portion of each butt, as clearly set forth in the applications and patents above referred to, is the outer end face of a butt, which bears against a cooperating device or devices. The upper end of the trick is beveled at 20 so that the tricks can be readily inserted beneath the spring band 11. At the bottom of the trick there is an extra wide butt 16 and the entire series of tricks by means of the butts 16 present a ratchet by means of which a pawl may index the trick wheel about a vertical axis inside the central opening 7, as more fully explained in the patent and application above referred to.

It will be seen that there is provided a pattern member upon which a pattern may be set up in an inexpensive manner and in an extremely short length of time. Furthermore the control parts of the wheel are strong and are very efficient in operation. Inasmuch as there are numerous parts and instrumentalities

ties upon a knitting machine which are controlled by means of pattern mechanism in order to cause the machine to knit a desired design, it will be seen that there is provided an extremely efficient pattern element for such use at various places on a knitting machine. For example a presser or selector or sub-jack with frangible butts may cooperate with needle-controlling jacks as shown in Patent No. 1,722,989, and various other possibilities of use of the trick wheel and the strip-like elements with frangible butts will occur to those skilled in the art, as will also numerous variations in the structure of such parts. For the reasons stated the invention is not confined to the structure shown and described, nor to the specific uses illustrated and described, but only as indicated in the appended claims.

Having thus fully described the said invention what is claimed as new and desired to be secured by Letter Patent is:

1. In a knitting machine, a grooved pattern wheel, and interchangeable strip-like elements having a plurality of frangible butts said elements being removably secured in fixed position in the grooves of the pattern wheel, substantially as set forth.

2. In a pattern mechanism for knitting machines, a slotted trick wheel, interchangeable strip-like pattern elements in the slots of the wheel, means for holding said strip-like elements in stationary position on the wheel, and outwardly extending frangible butts on said strip-like elements said butts having active faces at their outer ends.

3. A pattern wheel having longitudinal grooves about its periphery, a circumferential groove intersecting them, a spring ring in said circumferential groove, and differentiated strip-like elements in said longitudinal grooves each with radially extending frangible butts having active faces at their outer ends said strip-like elements being beveled at their upper ends so as to pass easily under said spring ring.

4. A pattern wheel for knitting machines said wheel having intentionally frangible butts of frangible material extending outwardly therefrom and arranged in rows circumferentially of the wheel, substantially as set forth.

5. A pattern wheel for knitting machines said wheel having intentionally frangible butts of frangible material extending outwardly therefrom and arranged in rows circumferentially of the wheel and longitudinally of the wheel, substantially as set forth.

6. A pattern wheel for knitting machines comprising a base member and interchangeable control members secured adjacent each other upon said base member, the control members having a plurality of frangible butts extending outwardly from said base member.

7. In a knitting machine, a strip-like pat-

tern element having an elongated body adapted to lie in a slot or the like, and a plurality of frangible butts on the body adapted to extend laterally outward from said slot.

8. An element for controlling knitting instrumentalities consisting of a substantially flat strip-like member having a plurality of frangible butts extending from an edge thereof.

9. A pattern element for controlling knitting machine instrumentalities, comprising a member having a plurality of butts of frangible material in spaced relation along said element.

10. A pattern element for a knitting machine instrumentality comprising an elongated member having a plurality of selecting means of frangible material in spaced relation along an edge of said member.

11. A thin flat strip-like metallic pattern element of frangible material having portions broken out along one side to leave one or more laterally-extending butts, substantially as set forth.

12. A pattern element for controlling knitting machine instrumentalities consisting of a flat strip-like body member having a plurality of frangible butts extending from an edge thereof and in the same plane as the plane of the body member.

13. A pattern element for controlling knitting machine instrumentalities consisting of a thin flat body member of frangible material having projecting means extending from an edge thereof to provide a full complement of selective operating points, said projecting means being adapted to be broken out as desired to leave projections at the desired selective points.

14. A pattern element for knitting machines comprising a flat body having a row of substantially identical frangible projections in the plane of the body said projections being substantially equally spaced from each other.

15. A method of setting up a design on a pattern wheel for a knitting machine, which comprises the steps of taking a plurality of tricks each having a number of spaced frangible butts thereon, breaking off certain of said butts in accordance with a predetermined plan, and securing said tricks in definite order upon said pattern wheel.

16. A method of setting up a pattern on a knitting machine instrumentality comprising forming a flat blank of frangible material, and breaking out undesired portions along one edge to leave one or more laterally extending selective operating points, substantially as set forth.

17. A method of setting up a pattern on a knitting machine instrumentality comprising forming a flat blank of frangible material, and breaking out a portion comprising a substantial part of one edge of the blank

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while leaving one or more adjacent portions to form selective operating points, substantially as set forth.

5 18. A knitting machine pattern control member, comprising a flat body of frangible material having projecting means extending from an edge thereof and forming the full complement of selective operating points, said projecting means at any selective point
10 being adapted to be removed by breaking out the frangible material at said point or points.

19. A knitting machine control instrumentality comprising a flat body member of frangible material having projecting from
15 an edge thereof and integral therewith a flat operating or control portion, comprising and forming the full complement of selective operating points or butts, the operative projection or butt at any desired selective point
20 being adapted to be removed by breaking out the frangible material at the said point or points.

In testimony whereof, said petitioner hereunto affixes her signature.

25 CAROLINE F. AMES,
Administratrix C. T. A., Elmer U. Ames,
Deceased.

while leaving one or more adjacent portions to form selective operating points, substantially as set forth.

18. A knitting machine pattern control member, comprising a flat body of frangible material having projecting means extending from an edge thereof and forming the full complement of selective operating points, said projecting means at any selective point being adapted to be removed by breaking out the frangible material at said point or points.

19. A knitting machine control instrumentality comprising a flat body member of frangible material having projecting from an edge thereof and integral therewith a flat operating or control portion, comprising and forming the full complement of selective operating points or butts, the operative projection or butt at any desired selective point being adapted to be removed by breaking out the frangible material at the said point or points.

In testimony whereof, said petitioner hereto affixes her signature.

CAROLINE F. AMES,
Administratrix C. T. A., Elmer U. Ames,
Deceased.

DISCLAIMER

1,780,328.—*Elmer U. Ames*, late of Collingswood, N. J., deceased, by *Caroline F. Ames*, Haddonfield, N. J., administratrix. KNITTING MACHINE. Patent dated November 4, 1930. Disclaimer filed May 23, 1932, by the administratrix, *Caroline F. Ames*.

Therefore disclaims claims 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, and 19 of the patent except insofar as said claims relate to a pattern element with projections (variously designated in said claims as butts or selecting means or selective operating points) having active faces at their outer ends for contacting with other elements of the machine in which said pattern elements are employed.

[*Official Gazette June 14, 1932.*]

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