April 7, 1959 D. P. MOORE 2,880,600

ROTATABLE CYLINDER KNITTING MACHINES

Filed June 18, 1957

Fig.1

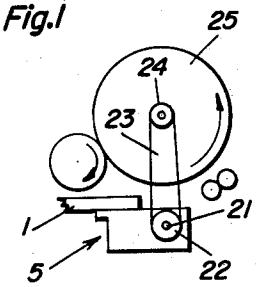
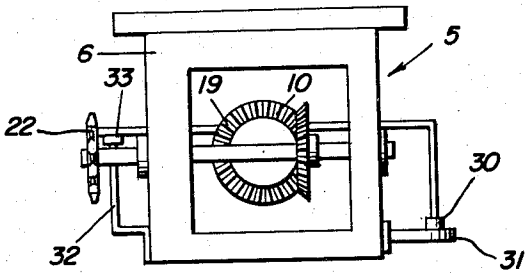


Fig.5



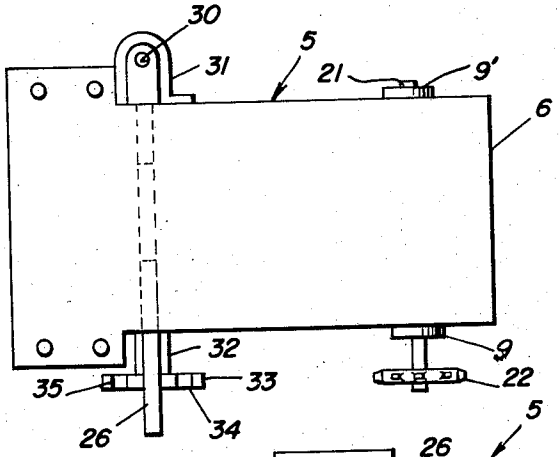
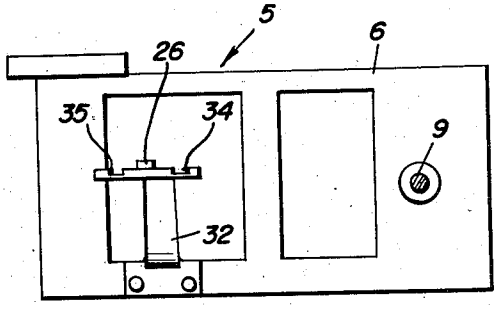


Fig.3

Fig.4



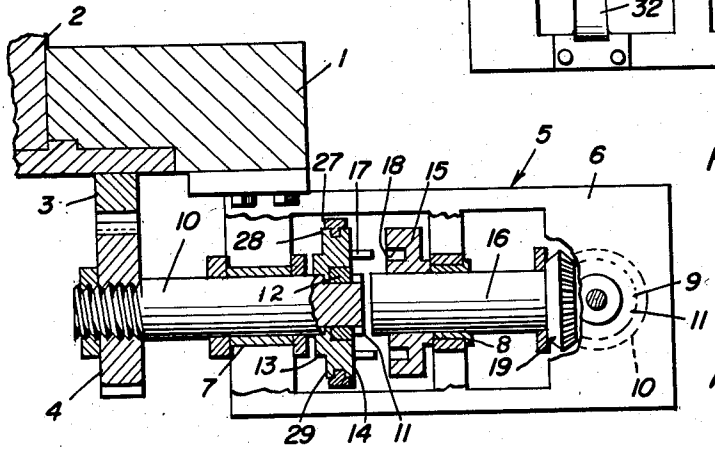


Fig.2

INVENTOR

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2,880,600

ROTATABLE CYLINDER KNITTING MACHINES

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Application June 18, 1957, Serial No. 666,438

3 Claims. (Cl. 66—9)

The present invention relates to improvements in rotatable cylinder knitting machines, one object of the invention being the provision of a universal machine of this type that will knit, at selected periods, jersey fabrics of varying weights or knitted pile fabrics of varying weights.

That is, when employed to knit pile fabrics, the fiber blenders and feeders are made operative with the rotatable needle cylinder, the unnecessary cams for jersey knitting having been idled during this operation and only enough cams to cooperate with the pile fabric making, but which when jersey fabrics are to be knitted, the fiber blenders and feeders are rendered idle, and the necessary jersey knitting cams brought in to use.

In the copending abandoned application filed January 24, 1957, Serial No. 636,168, a different type of intermediate drive is shown and described, while in this instance such drive is carried upon the underside of the bed plate of the knitting machine and not on top thereof.

In order that this invention may be fully understood, attention is invited to the accompanying drawings, in which:

Figure 1 is a diagrammatic view of the bed plate of the knitting machine, showing in reduced scale the intermediate drive and one fiber blender and feeder.

Figure 2 shows a section through the needle cylinder, the bed plate and parts of the intermediate drive mechanism.

Figure 3 is a top plan view of the intermediate drive merchanism per se.

Figure 4 is a side view of the same, showing only the frame structure.

Figure 5 is an end view on a reduced scale of the frame structure with the driven shaft and clutch operating lever.

Referring to the drawings, the numeral 1 designates the bed plate of a rotatable cylinder latch needle machine, and 2 designates the needle cylinder, having its annular driven gear 3, which in this instance becomes the drive gear through a spur gear 4 to an intermediate gear mechanism 5, attached to and carried by the bed plate below the same.

This intermediate gear mechanism includes a main frame 6, which may be cast or molded in two pieces, and welded together, so as to provide the two aligned journal bearings 7 and 8, and the aligned journal bearings 9—9', which are at right angles to the other journal bearings.

Mounted in the journal bearing 7, is a shaft 10, to the inner end which is carried the spur gear 4, while at its other end there are one or more key-ways 11, into which slidably fit keys 12, carried by the slidable sleeve 13, which in turn carries a clutch member 14. This may be provided with any means that will fixedly connect the same to the fixed clutch member 15, carried by the shaft 16, journaled in the journal bearing 8, but here this clutch member 14 is provided with projecting lugs 17 to enter the recesses 18 of the fixed clutch member 15.

Upon the outer end of the shaft 16, remote from the clutch member 15, is a bevel gear 19, which in turn meshes with the right-angle disposed bevel gear 20, which is fast to the shaft 21, journaled in the bearings 9—9'. By this arrangement, when the clutch is closed, the needle cylinder imparts rotation to the shafts 10 and 16, and also shaft 21.

Upon the extreme end of the shaft 21 is mounted a sprocket wheel 22, and through a chain 23, operates another sprocket wheel 24, carried by the fiber blender and feeder 25, which is attached to the upper face of the bed plate directly above, but to one side of the intermediate gear mechanism.

In order to operate the slidable clutch member 14, a lever 26, having a yoke 27, that fits about or over the groove 28 of the slidable sleeve 13, with two pins 29, that fit in said groove 28, and as the lever is pivoted at 30 to an arm 31 carried by the frame, the lever can be moved right or left to close or open the clutch. Carried by the frame below the lever is an arm 32, carrying a bar 33, having notches or recesses 34 and 35 in its upper surface. These notches are to receive the lever in either a clutch closing or open position. That is when the lever is moved to the right and fitted into the notch 34, the clutch is held closed, or when moved to the left and fitted into the notch 35, the clutch is locked open.

When the clutch is locked closed, the unnecessary cams of the knitting machine are rendered idle, and the fiber blender or feeder, that is one or more, are operated to knit a pile fabric, while when the clutch is locked open, the necessary cams for jersey knitting are brought into play, and pile blenders and feeders are idle.

Thus it is evident by this construction that the user may elect to make knitted pile fabrics or jersey fabrics, and when long billed latch needles such as needle 36 are employed, varying weights of either the pile knitted fabric or jersey fabric may be made as set forth in the above noted pending application.

In a normal 26 inch cylinder machine, having 16 to 32 cams or knitting positions, each of the fiber blenders and feeders will cover three to four, using one of these cams to knit the pile fabrics, but inasmuch as the base plates of the fiber blenders and feeders each have bolt and slot connections to the bed plate, when the clutches are thrown and locked out, the fiber blenders and feeders are then slid outwardly and bolted, so that all of the cams of the machine can be brought into play for knitting jersey fabrics, thus not reducing the production, when shifted for jersey fabrics.

What is claimed is:

1. A rotary cylinder knitting machine, including a bed plate, a rotatable needle cylinder having a drive gear thereon mounted in the bed plate, a fiber blender and feeder mounted on the bed plate, and mechanism for driving the fiber blender and feeder from the drive gear of the needle cylinder, including a supporting frame attached to the bed plate, two aligned and spaced shafts mounted in the supporting frame, a gear upon the end of the inner shaft and in gear with the gear of the needle cylinder, a clutch connection between the abutting ends of the aligned shafts to connect and disconnect the outer shaft from the inner shaft, a cross shaft mounted in the supporting frame adjacent the non-clutch end of the outer shaft of the aligned shafts and having its ends projecting exteriorly of the supporting frame, meshing gears carried by the cross shaft and its adjacent aligned shaft, and a gearing drive between one extended end of the cross shaft and the fiber blender and feeder.

2. A rotary cylinder knitting machine as claimed in claim 1, wherein the clutch consists of two members, one of which has a grooved periphery and is slidably keyed to the end of one of the aligned shafts, and a manually

operated lever having one end pivoted to the supporting frame and its intermediate portion operably connected to the groove of the slidable clutch member for operating to connect and disconnect the clutch.

3. A rotary cylinder knitting machine as claimed in claim 1, wherein the clutch consists of two members, one of which has a grooved periphery and is slidably keyed to the end of one of the aligned shafts, a manually operated lever having one end pivoted to the supporting frame with its intermediate portion operably connected

to the groove of the slidable clutch member for operating to connect and disconnect the clutch, and a means to lock the lever in either clutch closed or clutch open position.

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