

March 19, 1940.

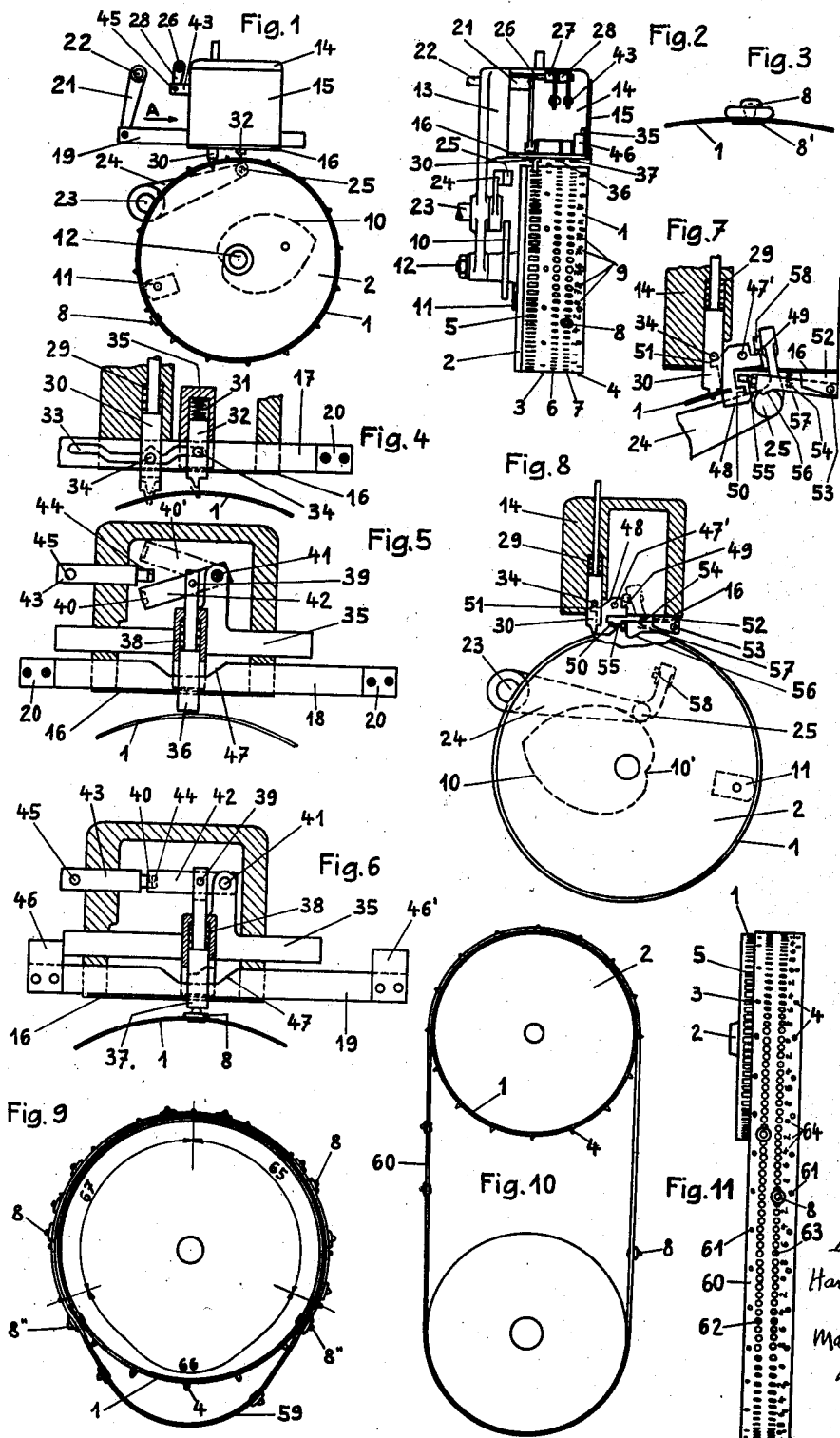
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MACHINE FOR THE PRODUCTION OF LOOPED FABRICS

Filed May 11, 1939

2 Sheets-Sheet 1



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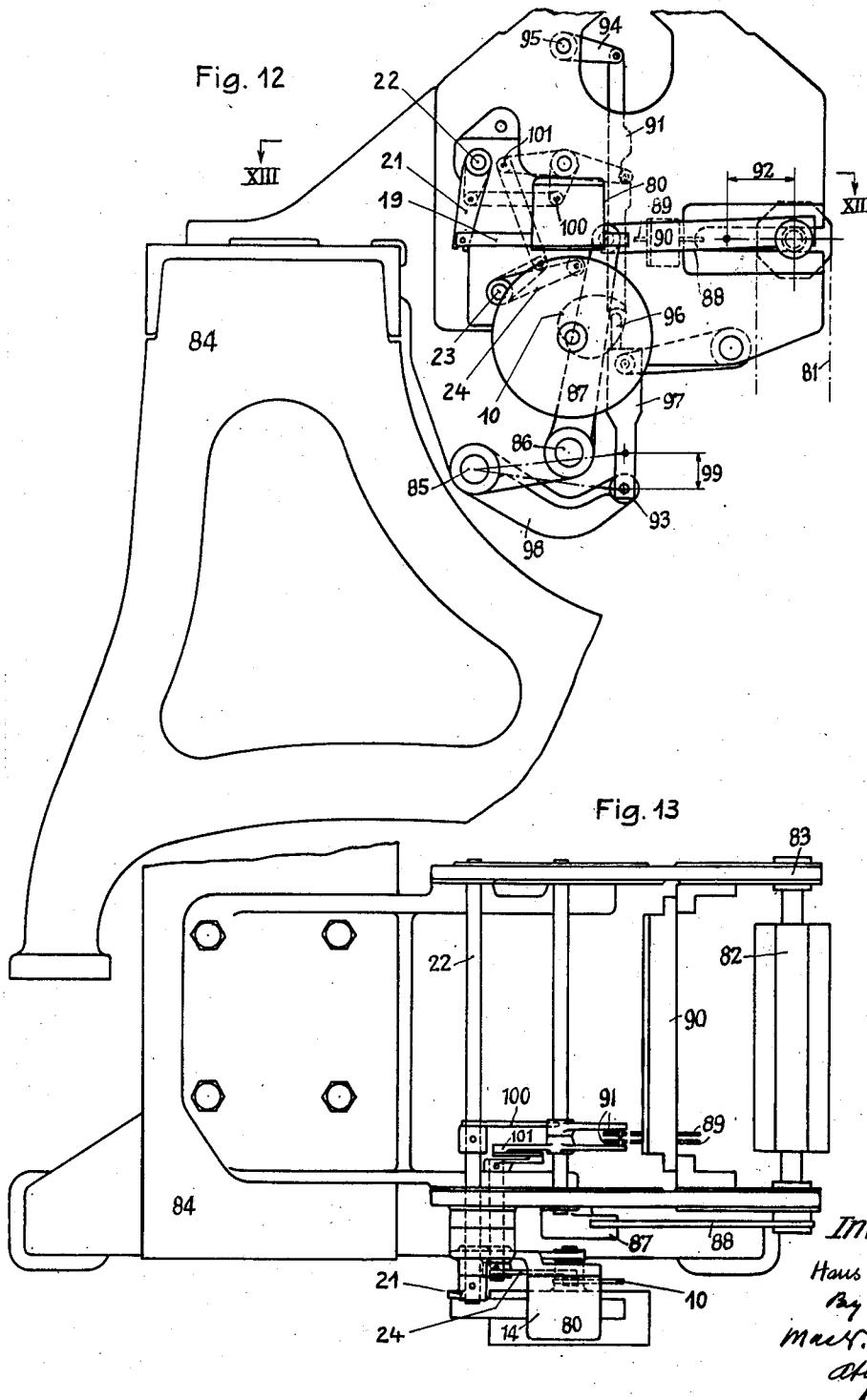
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UNITED STATES PATENT OFFICE

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MACHINE FOR THE PRODUCTION OF
LOOPED FABRICS

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12 Claims. (Cl. 66—155)

This invention relates to machines for the production of looped fabrics or mesh ware.

There are various known constructions of counting devices existing which serve for influencing the advance movement of the control chains, that is, the pattern chains of machines for the production of looped fabrics.

It has already been proposed to secure adjustable stop blocks to the circumference of a counting drum for alternately initiating the forward and the rearward counting of the counting device itself or for alternately rendering operative and inoperative the pattern chain.

A further known proposal is concerned with the arrangement of a counting disc having driving studs inserted therein for influencing the advance movement of the pattern chain by hitting a feeler lever.

In connection with these known arrangements, a resetting device is used which at the end of the feed movement resets the spring-influenced counting disc into initial position of rotation after a driving stud arranged on the counting disc is released. Such an arrangement does not permit the counting disk to be rotated through more than one turn before having been reset into initial position of rotation by the resetting device.

It is further known to employ counting chains with dogs attached thereto, or correspondingly punched counting paper strips for influencing the advance movement of the pattern chain.

The counting devices referred to are adapted to be controlled at each traverse of the slide, that is, at each double traverse of the slide and associated parts of the machine. There are further constructions existing in which the counting device is fed only after the lapse of certain time periods in dependence upon the selecting operation of the pattern cards, for example, preferably by the penultimate pattern card of a set of pattern chain links which set is to be advanced after a certain number of repeats of pattern.

Whereas certain counting devices are counting forwardly and rearwardly, other counting devices are adapted to be released after the pattern chain has advanced by a certain number of steps and are rotated back into the initial position by spring force. Again other counting devices, particularly counting devices provided with endless chains or bands, are so designed that these chains or bands return into initial position by keeping on turning after the completion of a certain number of feed steps.

Such resettable counting devices, inclusive of

endless chains or counting discs have the drawback that each time when setting a different size or a different pattern the stops, dogs or studs must be adjusted anew, so that trained operators only are capable of effecting these adjustments.

If chains or punched bands are used a length established once for all and a pattern for a certain article can be kept in store, and all there is to be done is to place the chain or the band for this article on the counting device. However, some difficulty arises if it is required to lengthen or shorten an article since to this end the chain or band must be lengthened or shortened at a point which is to be chosen to suit requirements. Furthermore, it is often uneconomical to make and keep in store a chain or band for each size and for each pattern. Moreover, in connection with bands that are punched according to a pattern it is inconvenient to punch new holes and to paste over old holes in order to alter the pattern.

Although the counting devices referred to are advantageous for certain purposes required for the time being, they all have the drawback not to be readily applicable either as endless band counting devices for staple goods, or combination counting devices for staple goods of a similar pattern but of variable lengths, or counting devices for small series of articles, which will not be used again, or traverse counting devices for special purposes, or as set counting devices.

The present invention has for its object the production of a counting device which has all the advantages inherent in the known counting devices without, however, presenting the aforesaid drawbacks.

The counting device, according to the invention, which serves for machines provided with a pattern device for the production of looped fabrics and in which control members, such as levers, feeler arms and the like, are actuated by releasing means, such as punchings, dogs, studs and the like, that are arranged on a counting drum in accordance with a pattern, is distinguished in that, in order to permit the counting drum and a counting band driven thereby to be selectively taken into use for releasing the control members, the counting drum, which is provided with punchings for feeding and locking the drum in position as well as with punchings for releasing the control members, is further provided with driving means for driving a counting band provided with any desired patterns.

A form of the invention is illustrated in the

accompanying drawings by way of example only, in which:

Fig. 1 is a schematic elevational view of a counting device according to the invention;

Fig. 2 shows a side elevation of Fig. 1;

Fig. 3 is a view of a releasing element inserted in position;

Fig. 4 is a section of the driving mechanism of the counting device;

Fig. 5 is a section of a feeler plunger with associated control members;

Fig. 6 is a section similar to Fig. 5 with the movable parts in different working positions;

Fig. 7 is a section of a locking bolt and associated ratchet mechanism with the latter in initial position;

Fig. 8 shows the same section as Fig. 7 but with the rotation mechanism of the counting drum in operative position;

Fig. 9 is a schematic view of a counting band for set counters in fixed position on a counting drum;

Fig. 10 is a schematic view of an endless counting band mounted in position;

Fig. 11 is a side elevation of Fig. 10;

Fig. 12 is an elevational view of the assembled parts, and

Fig. 13 is a section on the line XIII—XIII of Fig. 12.

The counting drum 1 of the counting device 80 consisting of a coiled metal band (Figs. 1 and 2), is fixed to a drum head 2 by means of driving studs 3. The counting drum is further provided with driving studs 4 riveted thereto which are spaced apart at certain distances like the driving studs 3. The punchings provided in the counting drum 1 in addition to the punchings for the driving studs 3, 4 are, advantageously, stamped out from the band prior to coiling the latter into drum shape. The numeral 5 designates punchings for feeding and locking the counting drum 1 in position, whereas the numerals 6 and 7 denote punchings for the reception of releasing elements 8 (Fig. 3). Numbers 9 corresponding to the punchings 6 and 7 are provided on the counting drum 1. On the drum head 2 are screwed a control cam 10 devoid of eccentric drive means and constituting a part of a rotation mechanism for the drum 1, and a dog 11. The cam 10 has two relatively inverted surfaces. The drum head 2 is rotatably mounted on a mounting member 13 by means of a pivot 12, this member being not shown in Fig. 1 for the sake of clearness.

A gear box 14 secured to the mounting member 13 accommodates the feed and control elements which are encased in dust-proof manner by means of covers 15, 16. The numeral 17 refers to a feed latch, whereas the numerals 18 and 19 designate two different control latches which are interconnected by separators 20 so as to form a frame and mounted in the gear box 14 for actuation by means of lever arms 21 from an actuating rocking shaft 22.

Further mounted on the mounting member 13 are an actuating rocking shaft 23 carrying a lever arm 24 provided with a guide roller 25, and a rocking bolt 26 which is secured to a lever arm 27, for example, by means of a pin, and carries a lever arm 28 which is loosely mounted thereon.

As shown in Fig. 3, conventional stud button fasteners may be used as releasing elements the upper portion 8 of which is situated on the outside of the drum 1, that is, the band forming

the same, whereas the base portion 8' thereof is situated on the inside.

In the gear box 14 is guided a locking bolt 30 loaded by a spring 29 (Fig. 4), the support for this bolt guiding a feed bolt 32 loaded by a spring 31. Both bolts 30, 32 are actuated by the feed latch 17 through the intermediary of a control slot 33 which is engaged by studs 34. In the gear box 14 is further mounted a support 35 (Figs. 5 and 6) which guides the feeler plungers or feeler bolts 36, 37 in addition to the feed bolt 32, these plungers being urged against the control latches 18 and 19, respectively, by springs 38. Rear extensions on these plungers 36, 37 are each coupled by means of a pin or stud 39 to one of two lever arms 42 which are swingably mounted on a pivot bolt 41 and each of which is provided with a hooked end 40. Opposite to each lever arm 42 is positioned a latch 43 slidably mounted in the gear box 14 and provided at one end with a hook 44 and at the other end with a stud 45 which studs engage with the lever arms 27, 28, respectively, as shown in Figs. 1 and 2. Stop members 46, 46' are arranged on the control latch 19, the control latches 18 and 19 being each provided with a recess 47. To the gear box 14 is pivotally connected a detent 48 by means of a pivot 47' and is provided with stop members 49, 50 and 51. A bracket 52 is secured to the cover 16 and carries a pawl 57 which is rockable on pivot pins 53, loaded by a spring 54 and provided with a releasing finger 55, and a nose 56. The lever arm 24 carries apart from the roller 25 a plunger 58, which is maintained in the position shown by spring means (not shown).

Figs. 9, 10 and 11 show counting bands 59, 60, which may be made of paper, and which are provided with punchings 61 for engagement with the driving studs 3, 4 (Fig. 2), with punchings 62, 63, and with numbers 64. The reference numerals 65, 66 and 67 on Fig. 9 indicate in this instance different counting band sections.

The drive of the counting device 80 is derived from the pattern chain 81 carried by the chain drum 82 of the patterning device 83 (Figs. 12 and 13). The drive of the patterning device 83 in turn is derived from the drive (not shown) of the knitting machine 84 through the intermediary of a rocking shaft 86. The rocking shaft 86 oscillates the chain drum 82 through a horizontal traverse 92 as indicated by a double arrow to the right in the upper part of Fig. 12 by means of a rocking lever 87 and a link 88. Pegs 89 are slidably mounted in a pin carrier 90 in opposition to the rows of coordinated punchings of the pattern chain 81. Lifters 91 of a lifting device 93 are suspended by means of guide arms 94 from a rocking shaft 95 and arranged opposite to the ends of the pegs 89 remote from the pattern chain 81. The lower ends of the lifters 91 cooperate in the vertical position of these lifters, when selected by the pattern chain, with the opposing striking studs 96 on lifting jacks 97 the lower ends of which are pivoted to a rocker arm 98 oscillating through a range 99, as indicated by a double arrow to the right in the lower part of Fig. 12, by action of a rocking shaft 85 in timed relation to the rocking movement of the shaft 86. From Fig. 13 it will be seen that alternate lifters 91 are operatively connected to the rocking shafts 22 and 23 through leverages 100 and 101, respectively, so that by selection of the pattern chain these shafts are rocked while during the upstroke of

the lifting device 93 the abutments 96 of the lifting jacks 97 of this device bear against the lower ends of the lifters 91. If, however, the pegs 89 are not selected by the pattern chain, that is, are urged against the lifters 91 in a manner known per se the lower ends of the lifters are swung out of the path of the vertically reciprocating abutments 96 by action of the oscillating movement of the pattern chain, in consequence of which the rocking shafts 22, 23 remain at rest.

The operation of the counting device according to the invention is as follows:

Providing the counting device 80 is driven by the driving arrangement herein disclosed the rocking shaft 22 is actuated when selected by the pattern chain (Figs. 12 and 13).

Accordingly, the lever arm 21 is rocked in the direction of the arrow A in Fig. 1 so that the feed latch 17 and the control latches 18, 19 are moved simultaneously. At the beginning of this movement the locking bolt 30 is in the lowermost position as indicated in Figs. 1 and 4. During the above-mentioned movement of the feed latch 17 the studs 34 on the locking bolt 30 and on the feed bolt 32 slide along the control slot 33. By pressure action of the spring 31 the feed bolt 32 moves as guided by the control slot 33 for the purpose of protruding into the punching 5 of the counting drum 1 (Fig. 2). Thereupon the locking bolt 30 is moved out of engagement with the counting drum 1, as indicated by the dotted line position in Fig. 4, so that on the stop member 46 hitting the support 35 (Fig. 6) the latter is moved in unison with this stop member, thereby moving the feed bolt 32 along with it, whereby the counting drum 1 is fed by one division. During the return movement of the lever arm 21, the feed latch 17 operates by action of the control slot 33 that the locking bolt is depressed by pressure effect of the spring 29, whereupon the feed bolt is returned, and that the stop member 46' hits the support 35 (Fig. 6) so as to return the latter into initial position, as shown in Figs. 4 and 5, so that a further feed operation can then be initiated.

In the circumference of the counting drum 1, releasing elements, such as resilient socket buttons or snap fasteners 8, 8', are inserted (Fig. 3). If counting bands 59 or 60 (Figs. 9, 10 and 11) are used the elements 8 are inserted in the counting bands. If set counting bands 59 are employed the individual band, that is, the counting band section 65, 66 or 67, respectively, to be used is so placed in position that the point 0 of the counting drum 1 representing the zero position coincides with the starting point of said counting band. In this case the counting band 59 is secured to the counting drum by means of snap fasteners 8'', the fasteners 8'' being arranged beyond the operating range of the counting band 59, for example, in the section 65 thereof.

As shown in Figs. 10 and 11, the counting band 60 placed on the counting drum 1 as an endless band can be used, for a set counter as well as for a traverse counter due to the fact that it returns into initial position or into a position corresponding exactly to the initial position, when an article is finished. In the latter event the length of the counting band is a multiple of the length of an individual band corresponding to the article in question.

The set counting band 59 (Fig. 9) is subdivided into sections 65, 66, and 67 each of which

corresponds to a different pattern or to a different size of the same pattern. Therefore, all there is needed is to secure the counting band 59 by means of the snap fasteners 8'' to the counting drum 1 in a position corresponding to the starting point 0 of the respective band section. Owing to this fact only one counting band is required for a certain article, the band to be stored up being provided with a section for each different size of the article in question. If a pattern is ordered it suffices to displace the snap fasteners 8 on a counting band, such as 59, in accordance with the new pattern, in exactly the same manner as required for displacing the snap fasteners on the counting drum 1 in accordance with a different pattern (Figs. 1 and 2).

A snap fastener inserted in the row of punchings 6 in the counting drum 1 (Fig. 2) or in the row of punchings 62 in the counting band 60 (Fig. 11) is adapted either to start the feed operation of the pattern chain or to effect the continuance of this operation after a set has been repeated a certain number of times, all of which is well known and thus appears to require no further explanation. Furthermore, a button 8 inserted in the row of punchings 7 or 63 is adapted to stop the machine.

Fig. 5 shows the counting device in operative condition. As previously mentioned, the control latch 19 has been moved to such an extent that the stop member 46 contacts with the support 35 (Fig. 6) so that the recess 47 underlies the feeler plunger 36 which is thus lowered by pressure effect of the spring 38. Since the lever arm 42 is connected with the feeler plunger 36 by studs 39 it is rocked on the pivot bolt 41 so that the hooked end 40 is displaced from the chain dotted position 40' into the lowered position. If then the support 35 is shifted from left to right the lever arm 42 does not influence the latch 43.

During the return movement the feeler plunger 36 is raised again by action of the oblique portion of the recess 47 so that the lever arm 42 and the hooked end 40 are rocked into position 40', whereupon the stop member 46' moves the support 35 from right to left (Fig. 6).

Provided that a snap fastener 8 then underlies the feeler plunger 36 the counting device effects a control operation as hereinafter described in connection with the feeler plunger 37 (Fig. 6). When the control latch 19 has arrived in the position corresponding to that shown in Fig. 5 for the control latch 18, the snap fastener retains the feeler plunger 37 (Fig. 6) in the medium position, the displacement of the plunger being effected by cooperation of the spring 33. As the stop member 46 strikes the support 35 the latter is moved into the position shown in Fig. 6. At the same time the hooked end 40 of the lever arm 42 coupled with the feeler plunger 37 by a pin 39 has moved the latch 43 in unison therewith by means of the hook 44, due to the fact that the lever arm 42 is also secured to the support 35 by means of the pivot bolt 41. In reversing the control operation, the control latch 19 lifts the feeler plunger 37 so that the lever arm 42 and the hooked end 40 together with it are rocked into the chain dotted position 40' (Fig. 5) and the latch 43 is returned into initial position, by means not shown, whereupon the stop member 46' displaces the support 35 into the position shown in Fig. 5.

The movement of the latches 43 is transmitted to the parts to be influenced, as evident from

Figs. 2 and 5 illustrating this operation for the latch 43 which is associated with the feeler plunger 36. In the course of this operation the plunger 36 transmits movement to the lever arm 27 by means of stud 45, whereby the rocking bolt 26 is rotationally displaced and the corresponding control operation of the pattern chain is started. The latch 43 (Fig. 6) actuated by the feeler plunger 37 influences the stopping device 10 of the machine by means of the lever arm 28, in a known manner.

After the counting drum 1 has effected the number of feed steps required by the pattern, the pattern chain initiates a movement with the result that the rocking shaft 23 and the lever arm 24 are rocked by the associated control members (Figs. 7 and 8). This lever is raised in its initial position as shown in Fig. 7, so that the roller 25 bears against the pawl 57 in consequence of which the locking bolt 30, which is loaded by the spring 29, rocks the detent 48 by exerting pressure on the stop member 51 by means of the stud 34.

If then the lever arm 24 is rocked the plunger 58 hits the stop member 49 on the detent 48 which rocks on the pivot 47', so that the spring 54 forces the pawl 57 into the position shown in Fig. 8 in which position the releasing finger 55 prevents the detent 48 from rocking backwardly by engagement with the stop member 50 on the detent.

While the detent 48 was rocking the stop member 51 had lifted the locking bolt 30 by means of the stud 34 so that the counting drum 1 is then free to rotate. The roller 25 meets with the control cam 10 in a relatively short time, thereby rocking this cam by pressure action of the roller 25 until the latter arrives in its end position at 10'. Due to the fact that the control cam 40 is connected to the counting drum 1 by means of the drum head 2, the drum has been turned into initial position. In the course of this turning movement the dog 11 hit the nose 56 of the pawl 57, whereby the latter was rocked into the position shown in Fig. 7, while the detent 48 was unlocked by the releasing finger 55 in order to allow the locking bolt 30 to protrude into a punching 5 in the counting drum 1 (Fig. 2) so that the latter is locked in its initial position, whereas the roller 25 on the lever arm 24 remains in its position at 10'. When the lever arm 24 is reset in the opposite direction by return movement of the associated control members into initial position, the plunger 58 rides off the stop member 49 on the detent 48, whereupon it returns into the position indicated in Fig. 7, while the pawl 57 is raised by the roller 25, so that clearance is provided between the dog 11 and the nose 56.

Therefore, the counting drum 1 or the counting bands respectively, can be reset into initial position by means of the rotation mechanism upon a certain limited number of feed steps having been carried out, due to initiation of a movement by the patterning device.

If the number of feed steps required for a pattern increases, the counting band may be given the shape of an endless band which returns into initial position on the completion of the pattern.

The open-ended counting band used may either be placed on a drum in the manner described by way of example, or may be guided by a rectilinearly shaped bar.

The drive of the counting device may be ef-

fected by means of another part of the machine than the pattern chain provided that this part is moved in time with this chain.

Summarily the counting device according to the invention has the following principal characteristics as evident from the preceding description.

The rows of continuous punchings for the reception of the releasing means as provided in the counting drum and in the counting bands to be placed on this drum correspond to each other in regard to division and distance, and the driving or actuating studs are so arranged on the counting drum that the apertures in a counting band placed thereon register with those in the drum. The drum and the bands, advantageously, consist of thin sheet metal so that snap fasteners can be inserted therein as stop members.

Furthermore, the counting bands or the drum to be provided with snap fasteners in accordance with a pattern are intended for use as traverse counters or as set counters, as desired, providing several patterning sections (band sections) are arranged thereon. In order to permit this arrangement to be carried out independently of the relation between the length of the counting band and that of the drum circumference the counting device is equipped with a reversing device which is releasable by the pattern chain and which rotates the drum for resetting the same into a certain initial position after temporarily rendering ineffective the locking of the drum which takes place after each feed step. This can be carried into effect in such manner that a lever, which is actuated on the termination of a section of a pattern, unlocks the drum when moving out of inoperative position and acts on a cam disc for rotationally displacing this disc which is secured to the drum, during its further movement, until the locking of the drum is rendered effective again by a dog secured to the drum.

The operations of feeding the drum and of detecting the releasing elements arranged on the drum or on the band are, advantageously, effected by means of bolts which are resiliently mounted in a common frame, being moved at each feed step of the counter, and a control bolt and a locking bolt of which effect the continuance of the drum feeding operation by interengagement with one row of punchings in the drum, while the remainder of the bolts remain in a raised position in the frame carrying them dependent upon whether they meet with a releasing element, thereby effecting the feed control movements, for example, setting the machine at rest or releasing, that is, initiating the feed control operation of the pattern chain.

The counting device designed in this manner allows of being used, for example, as an ordinary traverse counter including a counting band or as a set counter with or without a counting band, without requiring substantial adaptation.

In using the counter as a traverse counter the counting drum is fed after each traverse of the slide of the machine by one division. Providing the development of the counting drum suffices for the intended purpose, the releasable reversing device for the counting drum is operated by a pattern card on the completion of an article and the drum is moved into initial position.

If, however, the article to be knitted is so dimensioned that in using the counter as a traverse counter the development of the counting device is insufficient, an endless band is placed in the

drum the number of band sections of which corresponds to the number of traverses of the slide which are required for completing the article of knitted goods. In connection therewith the beginning of the counting band always coincides with the beginning of the article. With this mode of functioning of the counter the reversing device is not operated, that is, the counting drum can be continually turned unimpeded.

10 In using the counter as a set counter the counting drum is fed by a division only on the completion of a repeat of pattern on the pattern card, that is, after a certain number of traverses of the slide.

15 With this possible mode of application of the counter the development of the counting drum thus suffices even for the largest article, while the reversing device is always used.

20 With a view to avoiding the necessity of rearranging the snap fasteners on the counting drum at each changing over to another article or to another size of the article counting bands, that is, set counting bands are used on which snap fasteners for one or more articles are arranged.

25 With this arrangement the reversing device is operated after the passage of each individual article in order to reset the counting drum, that is, the counting band into initial position.

30 Various changes and modifications may be made in the practice of my invention without departing from the principle or spirit thereof, by adding customary practice and established knowledge of the art to the present disclosure and the scope of the appended claims is not to be regarded as limited except as specified therein.

I claim:

1. In a counting device for machines for the production of looped fabrics operating by means of a patterning device, a rotatable counting drum having openings for feeding and locking said drum, control means operatively connecting said patterning device with said drum for the transmission of mutual control operations between said drum and said device, and adapted to engage in said openings in said drum, and driving means provided on said rotatable drum for the actuation of a counting band selectively placed on said drum, said drum and said band being provided with control openings for releasing said control means in accordance with the requirements of a pattern to be produced by the machine.

2. In a counting device for machines for the production of looped fabrics operating by means of a patterning device, a hollow rotatable counting drum provided with openings for feeding and locking said drum over all the circumference thereof, control means operatively connecting said patterning device with said drum for the transmission of mutual control operations between said drum and said device, and adapted to engage in said openings in said drum circumference, releasing elements for said control means, and driving means provided on said rotatable drum for the actuation of a counting band selectively placed on said drum, said drum and said band being provided with at least one row of openings for the reception of said elements for releasing said control means in accordance with the requirements of a pattern to be produced by the machine.

3. In a counting device for machines for the production of looped fabrics operating by means of a patterning device, a hollow rotatable counting drum provided with openings over all the circumference thereof, control means operatively

connecting said patterning device with said drum for the transmission of mutual control operations between said drum and said device, and adapted to engage in said openings in said drum circumference, releasing elements for said control means, and driving means provided on said rotatable drum for the actuation of a counting band selectively placed on said drum, said drum and said band being provided with at least one row of coinciding openings for the reception of said elements for releasing said control means in accordance with the requirements of a pattern to be produced by the machine.

4. In a counting device for machines for the production of looped fabrics operating by means of a patterning device, a hollow rotatable counting drum provided with openings over all the circumference thereof, control means operatively connecting said patterning device with said drum for the transmission of mutual control operations between said drum and said device and adapted to engage in said openings in said drum circumference, releasing elements for said control means, and driving means provided on said rotatable drum for the actuation of an endless counting band selectively placed on said drum, said drum and said band being provided with at least one row of coinciding openings for the reception of said elements for releasing said control means in accordance with the requirements of a pattern to be produced by the machine.

5. In a counting device for machines for the production of looped fabrics operating by means of a patterning device, a hollow rotatable counting drum made of thin sheet metal and provided with openings over all the circumference thereof, control means operatively connecting said patterning device with said drum and adapted to engage in said openings in said drum circumference, snap fasteners providing releasing elements for said control means, and driving means provided on said rotatable drum for the actuation of a counting band made of thin sheet metal selectively placed on said drum, said drum and said band being provided with at least one row of coinciding openings for the reception of said snap fasteners for releasing said control means in accordance with the requirements of a pattern to be produced by the machine.

6. In a counting device for machines for the production of looped fabrics operating by means of a patterning device, a rotatable counting drum having openings for feeding and locking said drum, a rotation mechanism operatively connected with said drum for rotating the latter into initial position, control means separately operatively connecting said patterning device with said drum and with the operating means of said rotation mechanism for actuating said mechanism from said device, and driving means provided on said rotatable drum for the actuation of a set counting band provided with several patterns selectively placed on said drum, said drum and said band being provided with control openings for releasing said control means in accordance with the requirements of a pattern to be produced by the machine.

7. In a counting device for machines for the production of looped fabrics operating by means of a patterning device, a rotatable counting drum having openings for feeding and locking said drum, a rotation mechanism operatively connected with said drum for rotating the latter into initial position, control means separately operatively connecting said patterning device with

said drum and with the operating means of said rotation mechanism for actuating said mechanism from said device, and driving means provided on said rotatable drum for the actuation of a traverse counting band provided with several patterns selectively placed on said drum, said drum and said band being provided with control openings for releasing said control means in accordance with the requirements of a pattern to be produced by the machine.

8. In a counting device for machines for the production of looped fabrics operating by means of a patterning device, a rotatable counting drum provided with several patterns and adapted to serve as a set counter having openings for feeding and locking said drum, a rotation mechanism operatively connected with said drum for rotating the latter into initial position, control means separately operatively connecting said patterning device with said drum and with the operating means of said mechanism for actuating said mechanism from said device, and driving means provided on said rotatable drum for the actuation of a counting band selectively placed on said drum, said drum and said band being provided with control openings for releasing said control means in accordance with the requirements of a pattern to be produced by the machine.

9. In a counting device for machines for the production of looped fabrics operating by means of a patterning device, a rotatable counting drum provided with several patterns and adapted to serve as a traverse counter having openings for feeding and locking said drum, a rotation mechanism operatively connected with said drum for rotating the latter into initial position, control means separately operatively connecting said patterning device with said drum and with the operating means of said rotation mechanism for actuating said mechanism from said device, and driving means provided on said rotatable drum for the actuation of a counting band selectively placed on said drum, said drum and said band being provided with control openings for releasing said control means in accordance with the requirements of a pattern to be produced by the machine.

10. In a counting device for machines for the production of looped fabrics operating by means of a patterning device, a rotatable counting drum having openings for feeding and locking said drum, a dog provided on said drum, a control cam secured to said drum, a rotation mechanism operatively connected with said drum for rotating said mechanism into initial position, control means separately operatively connecting said patterning device with said drum and with the operating means of said mechanism, a rockable lever arm included in said operating means for actuating said mechanism from said patterning device by rendering ineffective the locking of

said drum while moving out of inoperative position on the completion of a pattern and by rotationally displacing said control cam until said drum is locked again by said dog, and driving means provided on said rotatable drum for the actuation of a counting band selectively placed on said drum, said drum and said band being provided with control openings for releasing said control means in accordance with the requirements of a pattern to be produced by the machine.

11. In a counting device for machines for the production of looped fabrics operating by means of a patterning device, a rotatable counting drum having openings for feeding and locking said drum, a dog provided on said drum, a control cam having two relatively inverted guideways secured to said drum, a rotation mechanism operatively connected with said drum for rotating said mechanism into initial position through maximum 180°, control means separately operatively connecting said patterning device with said drum and with the operating means of said mechanism, a rockable lever arm included in said operating means for actuating said mechanism from said patterning device by rendering ineffective the locking of said drum while moving out of inoperative position on the completion of a pattern and by rotationally displacing said control cam in either direction by cooperation with the respective guideway thereof, until said drum is locked again by said dog, and driving means provided on said rotatable drum for the actuation of a counting band selectively placed on said drum, said drum and said band being provided with control openings for releasing said control means in accordance with the requirements of a pattern to be produced by the machine.

12. In a counting device for machines for the production of looped fabrics operating by means of a patterning device, a rotatable counting drum having a row of openings for feeding and locking said drum, locking and feed bolts for said drum as well as feeler plungers resiliently mounted in a frame moved during each feed step of said counting drum for the transmission of mutual control operations between said drum and said device, said locking and feed bolts adapted to engage in said row of openings, releasing elements for said feeler plungers, and driving means provided on said rotatable drum for the actuation of a counting band selectively placed on said drum, said drum and said band being provided with control openings for the reception of said elements, said feeler plungers when meeting with one of said elements remaining in raised position in said frame thereby initiating the feed operations.

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