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## Description

### Technology Field

This invention relates to a reciprocating mechanism of loop-forming sinker in knitting machine, to make the sinker achieve a shorter reciprocating movement forming the knitted fabric.

### Background

The element which can effect knitting in knitting machine, is the application of needle and loop-forming sinker, through the reciprocating movement of needle and loop-forming sinker in vertical direction, to achieve a effect of knitting in the manner of looping and mutual shuttling of the yarns.

As is shown in picture 1, needle 91 is installed in vertical direction as an element for vertical reciprocating movement, loop-forming sinker 92 is one element used for transversely reciprocating movement which can shuttle between needle 91. The loop-forming sinker mainly comprise nasal part 921, abdominal part 922 and laryngeal part 923 etc.; and wherein, laryngeal part is located between nasal part 921 and abdominal part 922. Making a front and rear reciprocating movement by loop-forming sinker, can make the yarns 93 which lies in front of nasal part 921, through the pushing and resisting of laryngeal part 921, bend on the needle 91. That can make the yarn 93 form loops on needle 91 and it will favor the next step, vertical lifter operation, of needle 91.

During transversely reciprocating movement, the front of the loop-forming sinker will swing in height direction along with the guiding of the guiding slot. A contradicting part can be installed in the aforesaid guiding slot, which can lead a smoother movement of guiding sheet in the guiding slot. Via the swing in height direction of the front of the loop-forming sinker, the loop-forming sinker can make a pressing cloth action towards the area where the yarns is knitted (routing area) and support initiative pulling force by the pressing cloth action, to make the yarns get rid of the restriction of laryngeal part of loop-forming sinker, thereby to complete the movement of departing from the item.

### The invention

This invention relates to a reciprocating mechanism of loop-forming sinker in knitting machine.

The reciprocating mechanism of loop-forming sinker in knitting machine in this invention is ,to install a guiding slot on the needle cylinder, and install a guiding sheet on the front end of the sinker, the guiding sheet can be inserted into the guiding slot, the guiding slot and the guiding sheet fits in the declining direction, to make the front end of the sinker swing in the height direction during the transversely reciprocating movement of the sinker.

There is one declining guiding area in aforesaid guiding slot, and there is one contradicting part responding to the declining guiding area to make the guiding sheet move in the declining direction in the guiding slot.

Compared to background technique, the new design of loop-forming sinker in this invention can provide the yarns the power of initiatively departing from the item, so the quit distance of loop-forming can be shorter than the background techniques in practice. For reasons given above, this invention can shorten the reciprocating distance of the loop-forming sinker. For example, the loop-forming sinker in previous technique should be installed at a reciprocating distance of 16 units in practice, and there is only 10~12 units needed in this invention. Under the high-speed and serried cooperation between needle and loop-forming sinker, this invention can save more accumulated time and decrease the energy consumption relatively.

**The details of attached pictures:**

**Drawing**

Picture1, the schematic diagram of existing technology.

Picture2, the practice schematic diagram of the reciprocating mechanism of loop-forming sinker in knitting machine in this invention

Picture3, the movement schematic diagram of the reciprocating mechanism of loop-forming sinker in knitting machine in this invention.

And wherein,

|    |                        |    |                            |
|----|------------------------|----|----------------------------|
| 10 | loop-forming sinker    | 20 | needle                     |
| 11 | nasal part             | 12 | abdominal part             |
| 12 | laryngeal part         | 14 | the guiding sheet          |
| 15 | the contradicting part | 30 | needle cylinder            |
| 31 | the guiding slot       | 31 | the declining guiding area |
| 40 | yarns                  | 41 | routing area               |

**Detailed description of the practice of this invention:**

As is shown in picture 2, which is the practice schematic diagram of the reciprocating mechanism of loop-forming sinker in knitting machine of this invention, the said loop-forming sinker 10 is the transversely reciprocating element in the knitting machine, to cooperate with needle 20 forming the knitted fabric.

The loop-forming sinker comprises nasal part 11, abdominal part 12 and laryngeal part 13 etc.; and wherein, the nasal part is installed on the top end of abdominal part 12, and the laryngeal part is located between nasal part 11 and abdominal part 12. And there is one guiding sheet 14 provided on the front end of the loop-forming sinker 10, and a contradicting part provided on the guiding sheet.

And there is a guiding slot provided on the needle cylinder, and a declining guiding area provided in the guiding slot. The aforesaid guiding sheet 14 can be inserted into the guiding slot 31, and the contradicting part 15 installed in the guiding sheet 14 can be corresponding to the declining guiding area 31.

As is shown in picture 3, which is the movement schematic diagram of the reciprocating mechanism

of loop-forming sinker in knitting machine of this invention, during the transversely reciprocating movement of the loop-forming sinker 10 in knitting, the front end of the sinker 10 can swing in the height direction along with the declining guiding area 32 , to favor the movement of yarns 40 depart from the item. Via the swing in height direction of the front of the loop-forming sinker 10, the loop-forming sinker can make a pressing cloth action towards the area where the yarns is knitted (routing area 41) and support initiative pulling force by the pressing cloth action, to make the yarns 40 get rid of the restriction of laryngeal part 13 ,thereby to complete the movement of departing from the item.

The abovementioned mechanism can effectively shorten the reciprocating distance of the loop-forming sinker 10. Because knitting machine is a kind of high-speed and serried action machine, when the reciprocating distance of the loop-forming sinker 10 is shorter, more accumulated time can be saved and relatively energy consumption can be reduced, to improve the efficiency of output.

## **Claims**

We claim:

1. A reciprocating mechanism of loop-forming sinker in knitting machine, its characters are: there is a guiding slot provided on the needle cylinder, and a guiding sheet provided on the front end of the sinker, the guiding sheet can be inserted into the guiding slot, the guiding slot and the guiding sheet fits in the declining direction,, to make the front end of the sinker swing in the height direction during the transversely reciprocating movement of the sinker.
2. A reciprocating mechanism of loop-forming sinker in knitting machine according to claim 1, its characters are: there is a declining guiding area provided on the guiding slot, and a contradicting part corresponding to the declining guiding area provided on the guiding sheet, to make the guiding sheet move in the declining direction in the guiding slot.