Feb. 16, 1932. J. WACHSMAN 1,845,454

KNITTING MACHINE

Filed Nov. 3, 1930

Fig. 1.

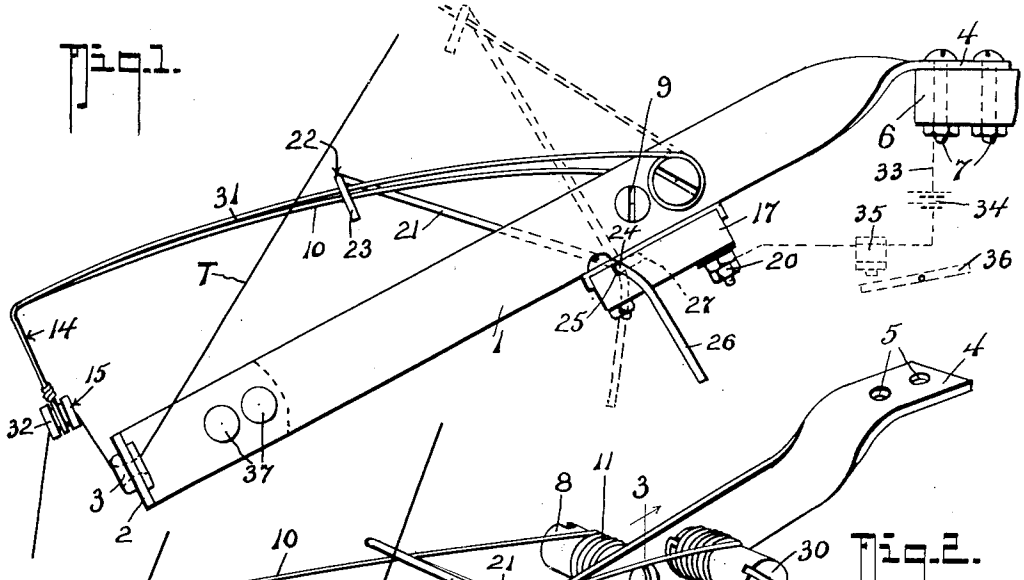


Fig. 2.

Fig. 3.

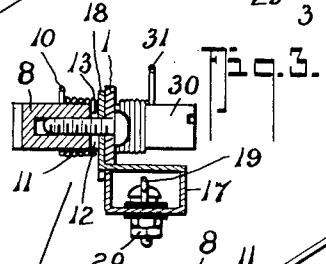


Fig. 4.

Fig. 5.

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KNITTING MACHINE

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My invention relates to certain new and useful improvements in knitting machines and it particularly seeks to provide a bracket for carrying a thread passing eye or eyes and slack take-up device.

Primarily, the invention has for an object to provide a bracket which will collect little or no dust and which will be of universal use throughout the machine wherever such brackets are employed.

Further, it is an object of the invention to provide an improved slack take-up device whose tension may be regulated at will.

Further, it is an object to provide a slack take-up device combined on said bracket with a simple circuit closer unit so that when a thread breaks the stop motion circuit of the machine may be instantly closed.

Other objects will in part be obvious and in part be pointed out hereinafter.

To the attainment of the aforesaid objects and ends, the invention still further resides in the novel details of construction, combination and arrangement of parts, all of which will be first fully described in the following detailed description, then be particularly pointed out in the appended claims, reference being had to the accompanying drawings, in which:

Figure 1 is a side elevation of the embodiment of the invention adapted particularly for stationary machines, this embodiment being shown as a duplex bracket, i. e., having two slack take-up devices.

Figure 2 is a perspective view of the bracket shown in Figure 1 together with the parts carried thereby.

Figure 3 is a cross section on the line 3—3 of Figure 2.

Figure 4 is a perspective view showing the bracket as a single unit.

Figure 5 is a detail longitudinal section through the circuit closer box.

In the drawings in which like numerals of reference indicate like parts in all of the figures, 1 represents a flat bar which is designed to lie in a vertical plane, the bar having one end bent or twisted to provide an ear 4 for mounting on a suitable support 6. The other end of the bar 1 is bent over at right angles laterally as at 2 and provided with a porcelain lined eye 3. The ear 4 has suitable holes 5 for the reception of the securing bolts 7 by which the bracket is fastened to the supporting part 6 of the machine.

8 designates a holding lug for the coil spring portion 11 of the slack take-up wire 10, the lug 8 being fastened to one side of the bar 1 by a screw 9. The lug 8 has a slot 12 adjacent the bar 1 into which the end 13 of the tension coil 11 is hooked so that by turning the wire holding lug 8, the tension may be increased or decreased at will.

The outer end of the slack take-up wire 10 is bent downwardly at 14 and carries a porcelain eye 15 that cooperates with the porcelain eye 29 that is located in the lateral attachment 28 of the bar 1 as indicated in Figure 1.

When the bracket is used on rotary type machines the stop motion circuit may be closed by contact of the wire 10 with a ring 16 which is located in the stop motion circuit 33 which includes the battery 34, stop magnet 35 and the stopping lever 36 as diagrammatically indicated in Figure 6, the lever 1 being also included in the circuit. Since the stop motion mechanism per se is no part of the present invention further discussion thereof is thought to be unnecessary as any well known form of stop mechanism operated by magnetic release may be used.

When the bracket is used on stationary machines, I prefer the construction shown in Figures 1 and 2. In this construction the bracket 1 carries a circuit closer consisting of a box 17 having a mounting ear 18 held in place by the screw 9 which secures the lug 8. The circuit closer box contains bearing notches 25 in which are fulcrumed a gravity actuated lever 21 so overbalanced as to lie normally in the position shown in full lines in Figure 1 but which, when raised to the dotted line position in Figure 1 by the release of a slack take-up wire 10, will effect a closure of the electric circuit of the stop mechanism. Within the box is an insulated contact spring 19 and the lever 21 has a heel 27 within the box designed to engage the spring 19 when

the lever assumes the position shown in dotted lines in Figure 1.

The lever 21 has a cross bar 22 that extends over the slack take-up wires 10 and 31 and is bent down at its opposite side as at 23 to constitute a side stop or guard to prevent the wires from slipping off when they have engaged the lever upon a breaking of a thread. The box 17 has bearing notches 25 for the bearing portions 24 of the lever 21, and the lever is extended rearwardly as at 26, the latter part constituting a partial counterbalance for the lever so that it will not take too much power to raise the lever to the circuit closing position.

When a duplex slack take-up arrangement is used, I provide an attachment 28 to the end of the bracket having the extension 2, the attachment 28 carrying a porcelain eye 29 and being secured to the lever 1 by rivets 37, or in any other suitable way, thus forming oppositely directed extensions each of which has a porcelain eye through which a thread T may be passed. Further a second wire spring holding lug 30 is provided and mounted on the bar 1 slightly to the rear of the lug 8 and on the opposite side, the lug 30 being of the same construction as the lug 8, and secured to the bar in the same way. A second slack take-up wire 31 is carried by the lug 30 and it has a porcelain eye 32.

So far as described and referring to the embodiments shown in Figures 1 and 2, when the thread T is running through the machine properly, the slack take-up wires 10 and 31 will assume the position shown in full lines in Figures 1 and 2. Should, however, the thread break the slack take-up wire will be released and fly up against the cross bar 22 of the lever 21 and cause that lever to be raised to the dotted line position shown in Figure 1 and thereby close the electric circuit between the heel 27 and spring 19, it being understood that the terminal ends of the stop motion circuit are respectively connected to the box 17 and to the circuit terminal 20.

When the single unit arrangement is used the lug 30 and slack take-up wire 31 is omitted and the attachment 28 is omitted, the slack take-up wire 10 is twisted slightly so as to bring its porcelain eye 15 over into alignment with the eye 3 and the thread is passed through the eyes 3 and 14.

From the foregoing description, taken in connection with the accompanying drawings, it is thought the complete construction, combination and arrangement of parts will be clear to those skilled in the art to which it relates.

What I claim is:

1. In knitting machines having an electrically actuated stop mechanism including a stop motion circuit; a bracket consisting of a flat bar having a mounting end for securing to a support, said mounting end and said bar being arranged to hold the bar with its major portion in a vertical plane, said bar also having a laterally extending ear provided with an eye through which a thread may be passed, a slack take-up comprising a spring wire having a coil at one end and a thread passing eye at the other end, means to mount said coil on said bar, and means cooperating with said slack take-up wire for closing the electric circuit of the stop motion when a thread breaks, said last named means comprising a circuit closer unit mounted on said bar and arranged to be actuated by said slack take-up when released, said circuit closer unit comprising a box, an insulated contact element in said box, a circuit closing lever normally lying in a circuit-open position and having a heel for engaging said contact element when said lever is released and having a portion to be engaged by said slack take-up when the same is released from the thread to move said lever to a circuit closing position.

2. In knitting machines having an electrically actuated stop mechanism including a stop motion circuit; a bracket consisting of a flat bar having a mounting end for securing to a support, said mounting end and said bar being arranged to hold the bar with its major portion in a vertical plane, said bar also having a laterally extending ear provided with an eye through which a thread may be passed, a slack take-up comprising a spring wire having a coil at one end and a thread passing eye at the other end, means to mount said coil on said bar, means including a circuit closer mounted on said bar cooperating with said slack take-up wire for closing the electric circuit of the stop motion when a thread breaks, and an auxiliary ear mounted on said bar and extending laterally in a direction opposite said first ear, said auxiliary ear having a thread passing aperture, a second slack take-up mounted on said bar and having a thread passing eye, one of said slack take-ups cooperating with one of said ears, and the other slack take-up cooperating with the other ear and both cooperating with said circuit closer, substantially as shown and described.

3. In knitting machines having an electrically actuated stop mechanism including a stop motion circuit; a bracket consisting of a flat bar having a mounting end for securing to a support, said mounting end and said bar being arranged to hold the bar with its major portion in a vertical plane, said bar also having a laterally extending ear provided with an eye through which a thread may be passed, a slack take-up comprising a spring wire having a coil at one end and a thread passing eye at the other end, means to mount said coil on said bar, and means including a circuit closer mounted on said

bar cooperating with said slack take-up wire for closing the electric circuit of the stop motion when a thread breaks, said last named means comprising a circuit closing unit mounted on said bar and arranged to be actuated by said slack take-up when released, and an auxiliary ear mounted on said bar and extending laterally in a direction opposite said first ear, said auxiliary ear having a thread passing aperture, a second slack take-up mounted on said bar and having a thread passing eye, one of said slack take-ups cooperating with one of said ears, and the other slack take-up cooperating with the other ear and both cooperating with said circuit closer, substantially as shown and described.

4. In knitting machines having an electrically actuated stop mechanism including a stop motion circuit; a bracket consisting of a flat bar having a mounting end for securing to a support, said mounting end and said bar being arranged to hold the bar with its major portion in a vertical plane, said bar also having a laterally extending ear provided with an eye through which a thread may be passed, a slack take-up comprising a spring wire having a coil at one end and a thread passing eye at the other end, means to mount said coil on said bar, and means cooperating with said slack take-up wire for closing the electric circuit of the stop motion when a thread breaks, said last named means comprising a circuit closing unit mounted on said bar and arranged to be actuated by said slack take-up when released, said circuit closing unit comprising a box, an insulated contact element in said box, a circuit closing lever normally lying in a circuit-open position and having a heel for engaging said contact element when said lever is released and having a portion to be engaged by said slack take-up when the same is released from the thread to move said lever to a circuit closing position, and an auxiliary ear mounted on said bar and extending laterally in a direction opposite said first ear, said auxiliary ear having a thread passing aperture, a second slack take-up mounted on said bar and having a thread passing eye, one of said slack take-ups cooperating with one of said ears, and the other slack take-up cooperating with the other ear, substantially as shown and described.

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