Sept. 5, 1944. E. VOSSEN ET AL 2,357,712

PRESS-OFF AND HOLE DETECTOR FOR KNITTING MACHINES

Filed Nov. 10, 1943 2 Sheets-Sheet 1

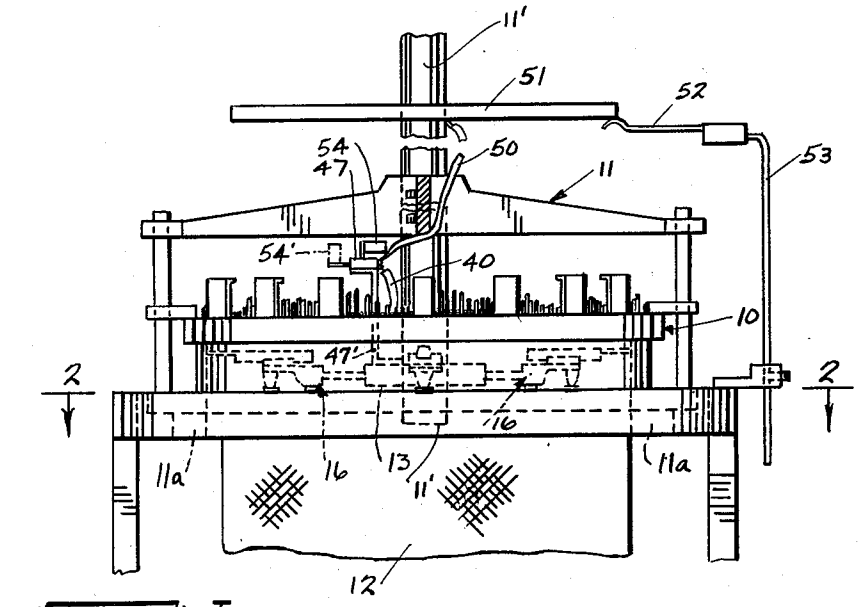


Fig. 1

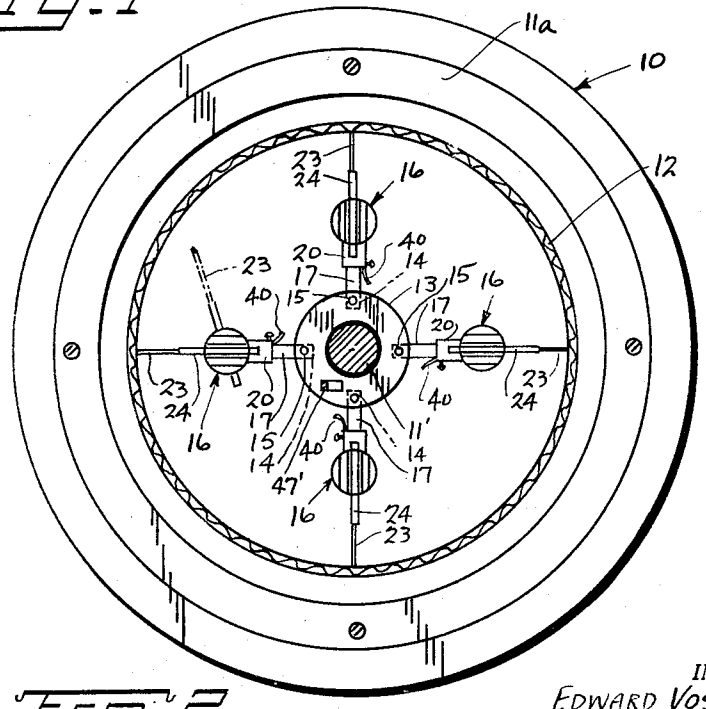


Fig. 2

INVENTORS
EDWARD VOSSEN and
BY NATHAN J. TELLERMAN

ATTORNEY.

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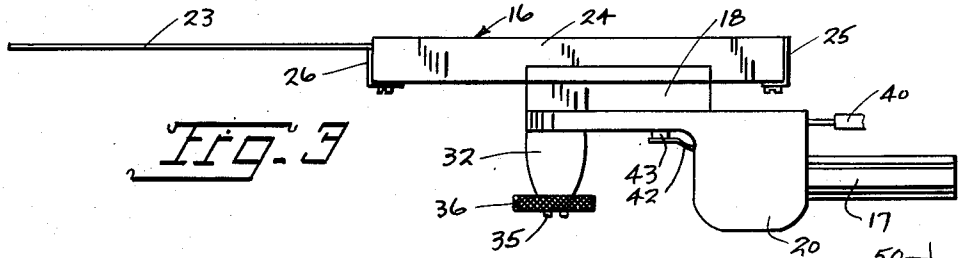


Fig. 3

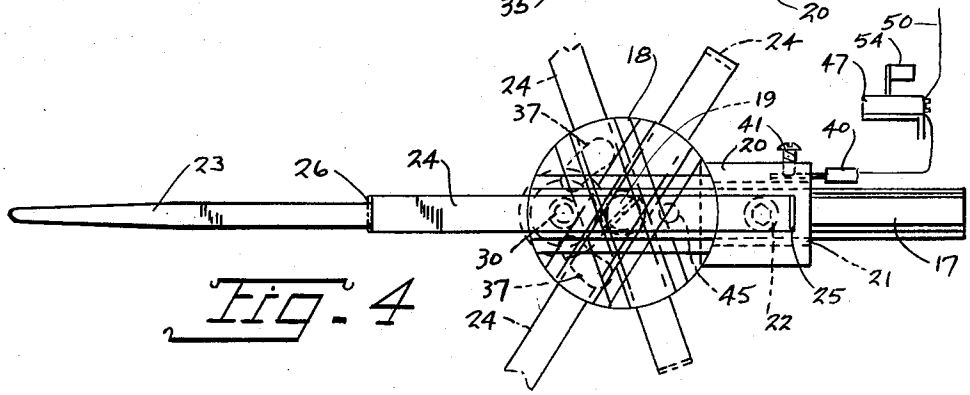


Fig. 4

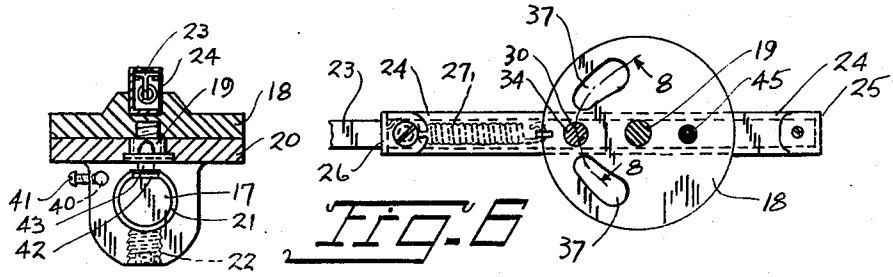


Fig. 7

Fig. 6

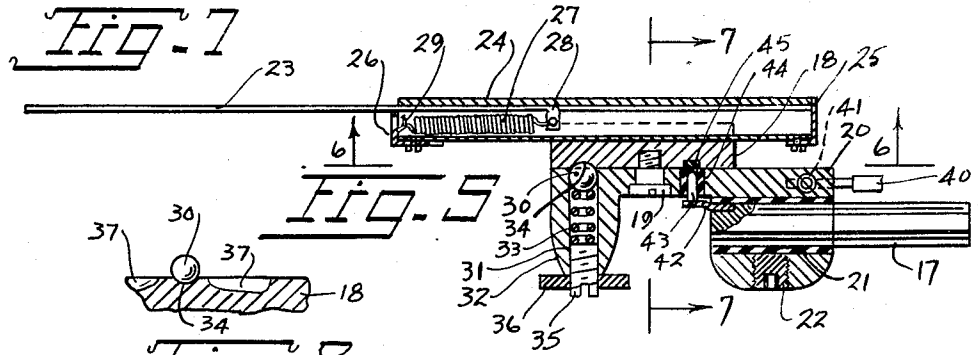


Fig. 5

Fig. 8

INVENTORS
EDWARD VOSSEN and
BY NATHAN J. TELLERMAN
ATTORNEY.

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PRESS-OFF AND HOLE DETECTOR FOR KNITTING MACHINES

Edward Vossen and Nathan J. Tellerman, Brooklyn, N. Y., assignors to Stop-Motion Devices Corp., Brooklyn, N. Y., a corporation of New York

Application November 10, 1943, Serial No. 509,708

12 Claims. (Cl. 66—166)

This invention relates to new and useful improvements in stop motion devices for knitting machines, and relates particularly to a press-off and hole detector.

Knitting machines are generally equipped with stop motion devices which indicate when one or more yarns or threads break, or when knots approach the needles of the machines and act to stop the knitting machines before any damage is done. However, knitting machines are capable of knitting defective material even though a thread is not broken or knotted. Frequently, defective needles will produce holes in the knitted material and if the machine is not immediately stopped, large sections of the knitted material will be defective. Furthermore when a yarn snaps at a carrier immediately before the needles a press-off occurs and if the knitting machine is not immediately stopped the press-off becomes complete and the knitted tubular material drops off of all the needles. This invention proposes a press-off and hole detector or detectors which will operate, in addition to the usual stop motion devices on the knitting machine for indicating broken and defective yarns, to detect holes in the knitted material and a press-off and to instantly stop the knitting machine.

The present invention is particularly intended to be used in combination with a tubular knitting machine having an open head (sinker top). Generally speaking, there are two types of these machines—one in which the head of the knitting machine rotates while the tubular knitted goods is non-rotative, and the other in which the head remains stationary and the tubular knitted goods is rotated during the knitting operation. The present press-off and hole detector may be used with either one of these two types of machines, and in fact may be used in any machine to which it may be applied and in which there is a relative rotation between the tubular goods being knitted and some axially aligned part.

The new press-off and hole detector is characterized by a member adapted to be connected with the axially disposed shaft of the knitting head so as to be located within the tubular knitted material immediately below the knitting needles. It is proposed to swivelly mount a body on this member to swing in a plane at right angles to the axis of the tubular knitted material, and to slidably mount a finger on said body to also move in a plane at right angles to the axis of the tubular knitted material. It is proposed to provide resilient means urging the outer end of said finger when said body is in a "neutral" or starting position against the inner face of said tubular knitted material. Friction means is provided for releasibly holding said body from swivelling from said neutral position until said finger engages in a hole in said tubular knitted material. An electric circuit for controlling the usual electric controller of the knitting machine connects said body and member in series. It is proposed to provide insulation means for breaking said electric circuit when said body is in said neutral position. With this construction the electric circuit will be instantly made when the finger engages a hole in the knitted material and is relatively pivoted to one side or the other of its neutral position.

This invention also proposes a construction in which said finger is capable of making another electric circuit, for operating the controller of the knitting machine if said finger passes through a hole in the knitted material or through a partial press-off and touches the metal cylinder of the knitting machine head. In this event the electric controller of the knitting machine will be operated even before said body has an opportunity to swivel from its neutral position, and thus complete the electric circuit mentioned. In other words, the device of this invention has a double action.

An important feature of the new press-off and hole detector resides in the fact that the knitted material is continuously passing across and wiping the outer end of said finger during the knitting operation, resulting in a clean finger which will make a good electric contact when engaging through a hole and touching the cylinder of the knitting machine head. Moreover, there is also a double cleaning action in that the knitted material is also passing across the cylinder of the knitting machine which the finger will touch to complete said electric circuit.

Another important feature of this invention resides in the fact that the body which carries said finger is capable of swiveling laterally, right or left away from the tubular knitted material leaving an area free for the knitter to work in. This makes it convenient to reach the knitting needles when repair is required.

Still further the invention contemplates characterizing the member previously mentioned which supports said swivelly mounted body by the fact that it is in the nature of a rod. It is proposed to radially adjustably mount said member (rod) so that it may be radially adjusted for indirectly controlling the resilient means which

urges said finger against the tubular knitted material. With this construction it is possible to readily adjust the relative tension at which the finger is pressed against the knitted material. This is of advantage when the knitted design is changed or when the yarn or threads used in knitting is varied by using heavier or lighter or different texture threads.

The invention further contemplates to make the friction means which releasably holds the swivelly mounted body adjustable so that the press-off and hole detector may be set to properly operate for the various weights and texture of the knitted material. When lightweight or fine yarns are being knitted, a lesser tension is required than when a heavy, or coarse material is knitted.

Still further the invention contemplates using more than one press-off and hole detector on a knitting machine. It is proposed to arrange these devices at relative angular positions from each other whereby a newly produced hole or a just starting press-off may be detected sooner.

The invention also proposes to provide a signal flag or other signal to indicate whether or not the press-off and hole detector device, or devices have their circuits turned on.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a fragmentary side elevational view of a tubular knitting machine of the open head (sinker top) type equipped with press-off and hole detectors constructed in accordance with this invention.

Fig. 2 is horizontal sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is an enlarged side elevational view of one of the press-off and hole detectors shown in Figs. 1 and 2.

Fig. 4 is a plan view of Fig. 3 with a schematic showing of the pivoting of the body thereof and a portion of the electric circuit of the device.

Fig. 5 is a longitudinal sectional view of Fig. 3.

Fig. 6 is a fragmentary sectional view taken on the line 6—6 of Fig. 5.

Fig. 7 is a sectional view taken on the line 7—7 of Fig. 5.

Fig. 8 is a fragmentary sectional view taken on the line 8—8 of Fig. 6.

The press-off and hole detectors, according to this invention, is used in combination with a tubular knitting machine 10 of any design and construction having a rotating head 11 and cylinder 11a, and a knitting head shaft 11' which is disposed axially of and rotating relative to the tubular knitted material 12. The detector devices are particularly intended for use on knitting machines generally known as the "open head" or "sinker top" type. This type of machine generally comes in two designs, one in which the knitting head 11 with shaft 11' rotates while the tubular knitted material 12 is non-rotative, and the other in which the knitting head and shaft is stationary while the tubular knitted material 12 rotates. However, in both types there is a relative rotation of knitting head shaft 11' and tubular knitted material 12 which is sufficient to make the present invention operative. Further details of the knitting machine itself will not be given in this specification since they form no part of the invention.

A collar 13 is fixedly mounted on the shaft 11' at a location within the top portion of the tubular knitted material 12. This collar is formed with a plurality of radial openings 14 extended inwards from its sides. Each opening 14 is controlled by a set screw 15 by which it is possible to adjustably mount a rod or similar element in position. A plurality of press-off and hole detectors 16 are shown supported radially on the collar 13 and are operative for detecting holes in the knitted material 12, as hereinafter more fully explained.

Each press-off and hole detector 16 includes a member 17 connected with said shaft 11 and disposed within said tubular knitted material 12. More particularly, the member 17 is in the nature of a rod. Its inner end is engaged within one of the openings 14 and it is adjustably held in position by the set screw 15 which controls said opening. A body 18 is swivelly connected with the member 17 to swing in a plane at right angles to the axis of the tubular knitted material 12. The body 18 is connected with the member 17 by being swivelly mounted by a pintle screw 19 upon a bracket 20 which in turn is mounted on the member 17. The bracket 20 is insulated from the member 17 by an insulation tube 21. A set screw 22 threadedly engaged through the side of the bracket 20 and abuts the insulation tube 21 for securely holding the bracket in position.

A finger 23 is slidably extended from the body 18 in a plane at right angles to the axis of the tubular knitted material 12. More specifically, the finger 23 is slidably mounted in a tubular casing 24 which in turn is fixedly mounted on the body 18. The tubular casing 24 has its ends closed with removable plates 25 and 26. Resilient means urge the finger 23 outwards so that its outer end, when said body 18 is in a neutral or starting position, engages against the inner face of said tubular knitted material 12. This resilient means is in the nature of a small helical spring 27 which is connected between the inner end 28 of the finger 23 and a lug 29 formed on the end plate 26.

The body 18 is releasably held from swiveling by friction means which includes a small steel ball 30 mounted within a passage 31 formed in a boss 32 of the bracket 20. A spring 33 is disposed within the passage 31 and engages and urges the steel ball 30 towards and into a small recess 34 formed on the bottom face of the body 18. A screw 35 is threadedly mounted in the bottom end of the passage 31 and controls the tension of the spring 33. A lock nut 36 is mounted on the screw 35 for locking it in adjusted positions. The bottom face of the body 18 is also formed with two pear-shaped recesses 37 located to the sides of the recess 34 and arcuately of the pivot screw 19 of said body 18. These pear-shaped recesses 37 have shallow ends immediately adjacent the recess 34 and have their remote ends much deeper. The arrangement is such that when the body 18 is pivoted right or left, the steel ball 30 will be forced out from the recess 34 and will enter one or the other of the pear shaped recesses 37 until a position is reached in which the steel ball 30 is in the deep end of the recess. This latches the body 18 from further turning.

The body 18 and member 17 are included in an electric circuit for controlling the electric controller (not shown on the drawings) of the knitting machine for stopping the knitting ma-

chine in the usual fashion. This electric circuit may be traced from an electric wire 40 which is engaged into an opening in the bracket 20 and clamped in position by a small set screw 41. Since the body 18 is in intimate contact with the bracket 20 the electric current is free to reach the body 18. It also reaches the finger 23. However, the current is insulated from reaching the member 17 because of the insulation tube 21. A small leaf spring 42 is mounted upon the outer end of the member 17 and supports a contact 43 which engages through an insulation tube 44 mounted through the bracket 20. The contact 43, as illustrated in Fig. 5, engages a small insulation disc 45 embedded in the bottom face of the body 18. With the parts as illustrated in Fig. 5 the electric circuit from the bracket 20 and body 18 to the member 17 is incomplete. However, if the body 18 is swivelled right or left so that the insulation disc 45 moves away from the contact 43, the contact 43 is free to engage the body 18 and complete the electric circuit.

In Figs. 1 and 2 a plurality of the press-off and hole detectors 16 have been illustrated connected with the shaft 11' and engaging the tubular knitted material 12. The electric cables 40 of these detecting devices 16 connect up with a manually operable switch 47 mounted on a bracket 47' which is mounted on the collar 13. The switch 47 receives its current from a lead 50 connected with a collector ring 51 receiving its current from a brush 52 of a supply line 53. The switch 47 is provided with a signal flag 54 which is in a vertical position when the switch is "on" and which is in a horizontal position, illustrated by the dot and dash lines 54', when the switch is "off." This provides a visual indicator indicating whether the circuit to the press-off and hole detector devices is "on" or "off." Other types of signals may be substituted, if desired.

The operation of the device is as follows:

During the operation of the knitting machine 10, the knitting head shaft 11' is turning relative to the tubular knitted material 12 which in the knitting machine 10 illustrated on the drawings is non-rotative. This causes the tubular knitted material 12 to relatively continuously move across the outer ends of the fingers 23 of the press-off and hole detector devices 16. When a hole or the start of a press-off comes along in the knitted material 12 and reaches the outer end of one of the fingers 23 one of two things may happen. The finger 23 may extend through the hole or press-off and touch the adjacent cylinder 11a of the knitting machine 10, or the finger 23 may be forced laterally in one direction or the other, depending upon the relative turning of the shaft 11' and knitted tubular material 12. In that type of tubular knitting machine in which the knitting head is stationary, the finger 23 will be pivoted in one direction, and when the press-off and hole detector 16 is used on that type of knitting machine in which the knitting head is rotative, the finger 23 will be pivoted in the other direction.

When the finger 23 projected through a hole or the start of a press-off in the knitted material 12 and touched said cylinder 11a of the knitting machine 10, the electric circuit of the controller of the knitting machine was closed and set into operation. The circuit through the press-off and hole detector may be traced from the lead 40 to the bracket 20 to the body 18, the finger 23 and the knitting machine which acts as a ground for completing the circuit. If the finger 23 was pivoted right or left, the electric circuit of the controller of the knitting machine was also closed. The circuit may now be traced by starting with the lead 40, the bracket 20, the body 18, the contact 43 which in a pivoted position of the finger 23 engages the body 18, the spring 42, and the member 17 which is also grounded to the knitting machine 10.

The press-off and hole detector, in accordance with this invention, is a very valuable addition to a knitting machine as it will prevent the waste of knitting time and knitting material. Often a needle becomes defective on a knitting machine and the knitted goods is knitted with holes. Even if the needle corrects itself, and one small hole is produced, it is an advantage to have a hole detector stop the knitting machine in that the operator may note that there is some defect which may cause periodic holes. The operator may make suitable correction. A press-off usually occurs when the fuzz of the yarn produces a slub in the yarn guide hole at the carrier immediately to the front of the needles, and the yarn sticks in the guide hole and breaks between the carrier and the needles. This causes a press-off to start, that is the knitted material starts falling off the needles and if the machine is not stopped, the press-off will be complete and the entire knitted goods will fall off all the needles. The ordinary stop motion devices on knitting machines do not function when a press-off starts and progresses to completion.

Several of the more important features of the new press-off and hole indicator will now be reviewed. Because the tubular knitted material 12 is moving continuously across and relative to the outer ends of the fingers 23, the fingers will be kept clean so that they may make good electric contact. Moreover, since the tubular knitted material 12 is moving down across the cylinder 11a of the knitting machine 10, this portion will be continuously wiped so that it is clean and may cooperate with the clean fingers 23 for making the electric current which controls the electric controller of the knitting machine. Another feature of the detector means resides in the fact that the bodies 18 may be swivelled right or left so that the fingers 23 are correspondingly turned and are moved away from the vicinity of the knitting needles of the knitting machine which are then exposed and may be replaced or repaired as required. Additional features of each hole detector device reside in the adjustability of the frictional holding and releasing means of the body 18 which is characterized by the steel ball 30 and regulating spring 33. This adjustability is useful in regulating the press-off and hole detector action to different weights and textures of knitted materials. Each member 17 of each hole detector may be radially adjusted by loosening the set screw 15 and moving the member 17 inwards or outwards. This is useful in controlling the tension at which the spring 27 of the hole detector 16 will engage the finger 23 against the tubular knitted material 12. Adjustment is made for different weights, and textures of knitted material. The signal flag 54 is useful in indicating to the operator whether the hole detector devices are on.

While we have illustrated and described the preferred embodiments of our invention, it is to be understood that we do not limit ourselves to the precise constructions herein disclosed and the right is reserved to all changes and modifications

coming within the scope of the invention as defined in the appended claims.

Having thus described our invention, what we claim as new and desire to secure by United States Letters Patent is:

1. In combination with a tubular knitting machine having a knitting head disposed axially of and rotating relative to the tubular knitted material, a member connected with said head and disposed within said tubular knitted material immediately below the knitting needles, a body swivelly connected with said member to swing in a plane at right angles to the axis of said tubular knitted material, a finger slidably extended from said body in a plane at right angles to the axis of said tubular knitted material, resilient means uring the outer end of said finger when said body is in a neutral position against the inner face of said tubular knitted material, friction means for releasably holding said body from swivelling from said neutral position until said finger engages in a hole in said tubular knitted material, an electric circuit for controlling the electric controller of said knitting machine and connecting said body and member in series, and insulation means for breaking said electric circuit when said body is in said neutral position.

2. In combination with a tubular knitting machine having a knitting head shaft disposed axially of and rotating relative to the tubular knitted material, a member connected with said shaft and disposed within said tubular knitted material immediately below the knitting needles, a body swivelly connected with said member to swing in a plane at right angles to the axis of said tubular knitted material, a finger slidably extended from said body in a plane at right angles to the axis of said tubular knitted material, resilient means urging the outer end of said finger when said body is in a neutral position against the inner face of said tubular knitted material, friction means for releasably holding said body from swivelling from said neutral position until said finger engages in a hole in said tubular knitted material, an electric circuit for controlling the electric controller of said knitting machine and connecting said body and member in series, insulation means for breaking said electric circuit when said body is in said neutral position, a collar fixedly mounted on said shaft and having a radial opening, a set screw for controlling said radial opening, and said member being in the nature of a rod adjustably mounted in said radial opening.

3. In combination with a tubular knitting machine having a knitting head disposed axially of and rotating relative to the tubular knitted material, a member connected with said head and disposed within said tubular knitted material, immediately below the knitting needles, a body swivelly connected with said member to swing in a plane at right angles to the axis of said tubular knitted material, a finger slidably extended from said body in a plane at right angles to the axis of said tubular knitted material, resilient means urging the outer end of said finger when said body is in a neutral position against the inner face of said tubular knitted material, friction means for releasably holding said body from swivelling from said neutral position until said finger engages in a hole in said tubular knitted material, an electric circuit for controlling the electric controller of said knitting machine and connecting said body and member in series, and insulation means for breaking said electric circuit when said body is in said neutral position, the swivel connection of said body with said member comprising a bracket mounted on said member, and a pintle screw swivelly holding said body on said bracket.

4. In combination with a tubular knitting machine having a knitting head disposed axially of and rotating relative to the tubular knitted material, a member connected with said head and disposed within said tubular knitted material immediately below the knitting needles, a body swivelly connected with said member to swing in a plane at right angles to the axis of said tubular knitted material, a finger slidably extended from said body in a plane at right angles to the axis of said tubular knitted material, resilient means urging the outer end of said finger when said body is in a neutral position against the inner face of said tubular knitted material, friction means for releasibly holding said body from swivelling from said neutral position until said finger engages in a hole in said tubular knitted material, an electric circuit for controlling the electric controller of said knitting machine and connecting said body and member in series, and insulation means for breaking said electric circuit when said body is in said neutral position, said finger being slidably extended from said body by slidably engaging within a tubular casing mounted on said body.

5. In combination with a tubular knitting machine having a knitting head disposed axially of and rotating relative to the tubular knitted material, a member connected with said head and disposed within said tubular knitted material immediately below the knitting needles, a body swivelly connected with said member to swing in a plane at right angles to the axis of said tubular knitted material, a finger slidably extended from said body in a plane at right angles to the axis of said tubular knitted material, resilient means urging the outer end of said finger when said body is in a neutral position against the inner face of said tubular knitted material, friction means for releasing holding said body from swivelling from said neutral position until said finger engages in a hole in said tubular knitted material, an electric circuit for controlling the electric controller of said knitting machine and connecting said body and member in series, and insulation means for breaking said electric circuit when said body is in said neutral position, said finger being sliadbly extended from said body by slidably engaging within a tubular casing mounted on said body, and said resilient means for urging the outer end of said finger against said knitted material comprising a spring within said tubular casing and connected with the inner end of said finger and connected with said tubular casing.

6. In combination with a tubular knitting machine having a knitting head disposed axially of and rotating relative to the tubular knitted material, a member connected with said head and disposed within said tubular knitted material, immediately below the knitting needles, a body swivelly connected with said member to swing in a plane at right angles to the axis of said tubular knitted material, a finger slidably extended from said body in a plane at right angles to the axis of said tubular knitted material, resilient means urging the outer end of said finger when said body is in a neutral position against the inner face of said tubular knitted material, friction means for releasably holding said body from

swivelling from said neutral position until said finger engages in a hole in said tubular knitted material, an electric circuit for controlling the electric controller of said knitting machine and connecting said body and member in series, and insulation means for breaking said electric circuit when said body is in said neutral position, the swivel connection of said body with said member comprising a bracket mounted on said member, and a pintle screw swivelly holding said body on said bracket, said friction means including a steel ball mounted in a passage in said bracket, and resilient means urging said steel ball against said body.

7. In combination with a tubular knitting machine having a knitting head disposed axially of and rotating relative to the tubular knitted material, a member connected with said head and disposed within said tubular knitted material, immediately below the knitting needles, a body swivelly connected with said member to swing in a plane at right angles to the axis of said tubular knitted material, a finger slidably extended from said body in a plane at right angles to the axis of said tubular knitted material, resilient means urging the outer end of said finger when said body is in a neutral position against the inner face of said tubular knitted material, friction means for releasably holding said body from swivelling from said neutral position until said finger engages in a hole in said tubular knitted material, an electric circuit for controlling the electric controller of said knitting machine and connecting said body and member in series, and insulation means for breaking said electric circuit when said body is in said neutral position, the swivel connection of said body with said member comprising a bracket mounted on said member, and a pintle screw swivelly holding said body on said bracket, said friction means including a steel ball mounted in a passage in said bracket, and resilient means urging said steel ball against said body, said body being formed with a small recess into which a portion of said steel ball engages.

8. In combination with a tubular knitting machine having a knitting head disposed axially of and rotating relative to the tubular knitting material, a member connected with said head and disposed within said tubular knitted material, immediately below the knitting needles, a body swivelly connected with said member to swing in a plane at right angles to the axis of said tubular knitted material, a finger slidably extended from said body in a plane at right angles to the axis of said tubular knitted material, resilient means urging the outer end of said finger when said body is in a neutral position against the inner face of said tubular knitted material, friction means for releasably holding said body from swivelling from said neutral position until said finger engages in a hole in said tubular knitted material, an electric circuit for controlling the electric controller of said knitting machine and connecting said body and member in series, and insulation means for breaking said electric circuit when said body is in said neutral position, the swivel connection of said body with said member comprising a bracket mounted on said member, and a pintle screw swivelly holding said body on said bracket, said friction means including a steel ball mounted in a passage in said bracket, and resilient means urging said steel ball against said body, and means for adjusting the tension of the resilient means acting against said steel ball.

9. In combination with a tubular knitting machine having a knitting head disposed axially of and rotating relative to the tubular knitting material, a member connected with said head and disposed within said tubular knitted material, immediately below the knitting needles, a body swivelly connected with said member to swing in a plane at right angles to the axis of said tubular knitted material, a finger slidably extended from said body in a plane at right angles to the axis of said tubular knitted material, resilient means urging the outer end of said finger when said body is in a neutral position against the inner face of said tubular knitted material, friction means for releasably holding said body from swivelling from said neutral position until said finger engages in a hole in said tubular knitted material, an electric circuit for controlling the electric controller of said knitting machine and connecting said body and member in series, and insulation means for breaking said electric circuit when said body is in said neutral position, the swivel connection of said body with said member comprising a bracket mounted on said member, and a pintle screw swivelly holding said body on said bracket, said friction means including a steel ball mounted in a passage in said bracket, and resilient means urging said steel ball against said body, said body being formed with a small recess into which a portion of said steel ball engages, said body being also formed with recesses to the sides of the recess engaged by said steel ball for limiting pivoting of the body.

10. In combination with a tubular knitting machine having a knitting head disposed axially of and rotating relative to the tubular knitted material, a member connected with said head and disposed within said tubular knitted material, immediately below the knitting needles, a body swivelly connected with said member to swing in a plane at right angles to the axis of said tubular knitted material, a finger slidably extended from said body in a plane at right angles to the axis of said tubular knitted material, resilient means urging the outer end of said finger when said body is in a neutral position against the inner face of said tubular knitted material, friction means for releasably holding said body from swivelling from said neutral position until said finger engages in a hole in said tubular knitted material, an electric circuit for controlling the electric controller of said knitting machine and connecting said body and member in series, and insulation means for breaking said electric circuit when said body is in said neutral position, the swivel connection of said body with said member comprising a bracket mounted on said member, and a pintle screw swivelly holding said body on said bracket, said member being insulated from said bracket, and said electric circuit including a spring connected with said member and supporting a contact slidably engaged through an insulation tube mounted through said bracket, said contact being urged towards and against said body, and said insulation means including a disc mounted on said body at a point engaged by said contact when said body is in said neutral position.

11. In combination with a tubular knitting machine having a knitting head disposed axially of and rotating relative to the tubular knitted material, a member connected with said head and disposed within said tubular knitted material im-

mediately below the knitting needles, a body swivelly connected with said member to swing in a plane at right angles to the axis of said tubular knitted material, a finger slidably extended from said body in a plane at right angles to the axis of said tubular knitted material, resilient means urging the outer end of said finger when said body is in a neutral position against the inner face of said tubular knitted material, friction means for releasably holding said body from swivelling from said neutral position until said finger engages in a hole in said tubular knitted material, an electric circuit for controlling the electric controller of said knitting machine and connecting said body and member in series, and insulation means for breaking said electric circuit when said body is in said neutral position, and said finger being in the nature of a contact to close a controller circuit as said finger passes through a press-off or hole in said knitted material and touches a metal part of said knitting machine for stopping said knitting machine.

12. In combination with a tubular knitting machine having a knitting head disposed axially of and rotating relative to the tubular knitted material, a member connected with said head and disposed within said tubular knitted material immediately below the knitting needles, a body swivelly connected with said member to swing in a plane at right angles to the axis of said tubular knitted material, a finger slidably extended from said body in a plane at right angles to the axis of said tubular knitted material, resilient means urging the outer end of said finger when said body is in a neutral position against the inner face of said tubular knitted material, friction means for releasably holding said body from swivelling from said neutral position until said finger engages in a hole in said tubular knitted material, an electric circuit for controlling the electric controller of said knitting machine and connecting said body and member in series, and insulation means for breaking said electric circuit when said body is in said neutral position, said electric circuit including signal means to indicate when said hole indicator is on for operation.

EDWARD VOSSEN.
NATHAN J. TELLERMAN.