Jan. 17, 1939. A. G. ROZYSKIE 2,144,124

ELECTRIC SIGNALING MECHANISM

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Fig. 1.

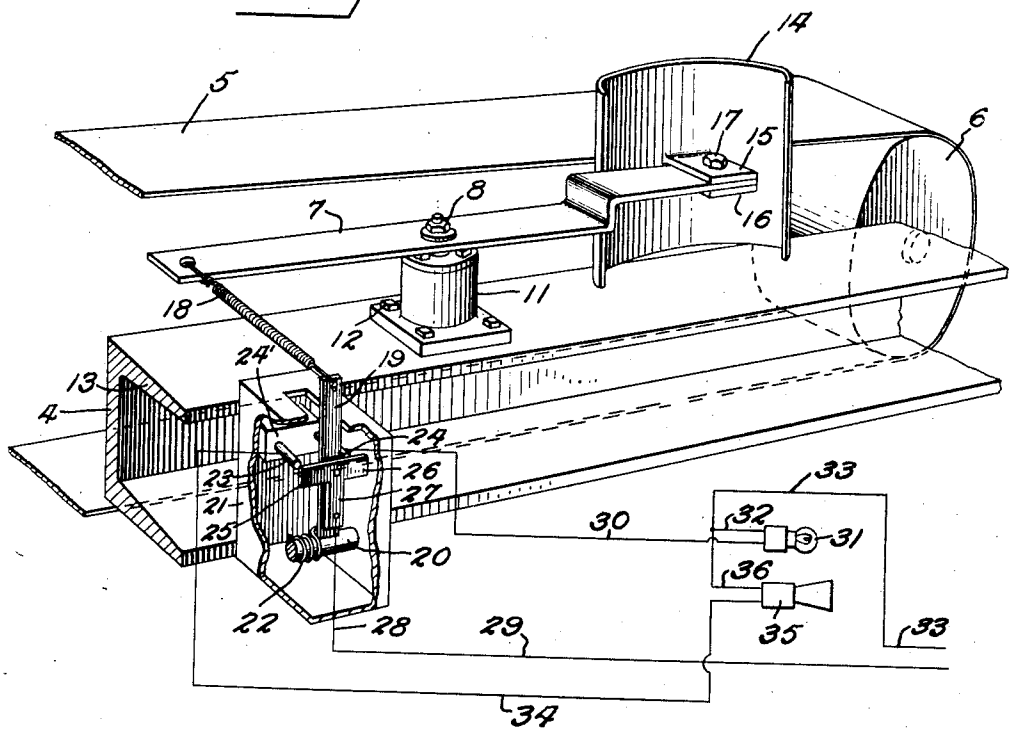
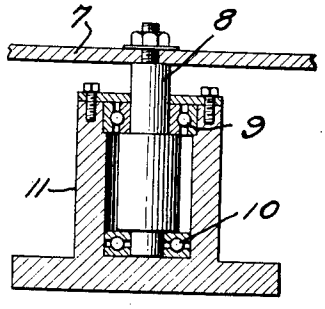
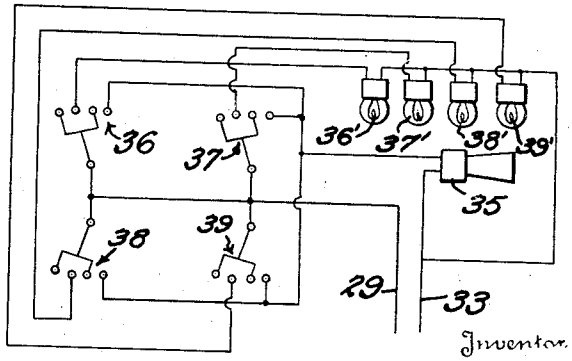


Fig. 3.

Fig. 2.





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ELECTRIC SIGNALING MECHANISM

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3 Claims. (Cl. 200—52)

This invention relates to electric signal mechanism designed to be applied to a machine to indicate when a moving part thereof has become displaced from movement in a certain direction beyond a predetermined limit.

The main object of the invention is to provide a device which will automatically operate a warning signal or signals upon displacement of a moving unit beyond a predetermined limit.

While the invention is applicable to any unit which must have limited movement in any direction, it is most sutable for use with endless units, such as belts, chains, wires, etc.; and, is particularly applicable to felt units on paper or board making machines. For convenience, therefore, the invention will be described herein as with Fourdrinier wires, or similar wires of paper machines.

Other objects of the invention will become apparent as the detailed description thereof proceeds.

In the drawing:

Figure 1 is a perspective view of the signal mechanism as applied to the frame of a paper machine;

Figure 2 is a central vertical section through a bearing element of said mechanism; and

Figure 3 is a diagram illustrating the invention as applied to a number of machines.

As shown particularly in Figure 1 of the drawing, the circuit closing part of the mechanism forming the present invention is supported on a horizontal runner 4, forming part of the frame work of a machine in which the felt 5 is supported on rolls 6 (only one of which is shown), for movement in a direction substantially parallel to the runner 4.

The circuit closer part of the mechainsm comprises a lever 7 pivoted between its ends by a pivot 8 which is mounted to rotate in ball bearings 9 and 10, enclosed in a casing 11 secured by bolts 12 to a flange 13 of the runner 4. A contact plate 14 which is semi-elliptical in cross section, is provided at the center of its concave face with a pair of parallel lugs 15 and 16 straddling and pivoted to one end of the lever 7 by a pivot bolt 17 extending through registering apertures in the lugs 15 and 16 and the aforesaid end of the lever 7.

The other end of the lever 7 is connected to a tension spring 18 having its other end connected to a plate 19, the lower end of which is fixed to a pivot pin 20 journaled at its opposite ends in the opposite sides of a housing 21 suitably secured to runner 4. A coil spring 22 is coiled around the pivot pin 20 and has one end fixed to the rear wall of said housing, the other end being bent around the rear side of the plate 19, to swing the plate 19 outwardly against the tension of spring 18.

A pair of electric contacts 23 and 24 are suitably secured to an insulated block 24' on the rear wall of the housing 21. These contacts extend on opposite sides of the plate 19 in the path of movement of the arms 25 and 26, respectively, of a pole plate 27, suitably secured to and insulated from the plate 19. The pole plate 27 is electrically connected by a wire 28 to one of the mains 29 of a source of electric energy. The contact 24 is connected by a wire 30 to a signal lamp 31, connected through wire 32 to the ground or return line 33. The contact 23 is connected by wire 34 to an audible signal 35 connected by wire 36 to the ground wire 33.

In the setting up of this apparatus the contact plate 14 may be adjusted about its pivot 17 so as to contact with the edge of the felt 5 in such manner that the coil spring 22 maintains the arms 25 and 26 of the pole plate 27 normally spaced from the contacts 23 and 24 against the tension of the spring 18. It will be evident that when the felt 5 is moved laterally out of its normal position against the plate 14, the lever 7 will be swung about its pivot 8 so as to move the arms 25 and 26 against the contacts 23 and 24, to operate the visual and audible signals 35 and 31, respectively.

The audible alarm 35 may be in the nature of a buzzer, bell, horn, siren or any other electrically operated alarm, capable of attracting the attention of the operator, regardless of the sounds resulting from the operation of the machine itself. This audible signal may be located in any desired position, preferably on the tending side of the machine in which it is used. The visual signal may be a colored or white light placed in such location as to be readily seen by the machine operator.

Any number of these circuit closing mechanisms may be used on one machine to control a corresponding number of visual signals, along with a single audible signal. The diagrammatic layout for such arrangement is illustrated in Figure 3, wherein the numerals 36, 37, 38 and 39 designate the mechanical combination of elements shown in Figure 1 of the drawing. The visual signals 36', 37', 38' and 39' are connected by suitable wiring for operation by the respective circuit closing mechanisms 36, 37, 38 and 39. The audible signal 35 is shown in Figure 3 as connected for operation simultaneously with any or all of the visual signals. The operation of this

multiple signaling system will be apparent from inspection of the drawing.

Although I have illustrated and described only one form of the invention I am aware of the fact that modifications can be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims.

What I claim is:

1. An electric switch for a machine including an endless felt and means for moving the same rectilinearly, said switch comprising: a support adapted to be fixed adjacent one edge of said felt; a lever pivoted between its ends on said support; a cam pivoted on one end of said lever and having a cam surface adapted to be moved by the adjustment of said cam about its pivot axis toward and from said edge; a circuit closer including a plate pivoted at one end on said support, yielding means connected to said support and plate for moving the free end of said plate away from said edge, and a tension spring connecting the other ends of said lever and plate to maintain the cam surface of the cam plate in yielding contact with said edge.

2. An electric switch for a machine including an endless felt and means for moving the same rectilinearly, said switch comprising: a support adapted to be fixed adjacent one edge of said felt; a lever pivoted between its ends on said support; a cam pivoted on one end of said lever and having a cam surface adapted to be moved by the adjustment of said cam about its pivot axis toward and from said edge; a circuit closer including a plate pivoted at one end on said support; and means connected to said support, plate and lever for holding said cam with its cam surface in yielding contact with said edge.

3. An electric switch for a machine including an endless felt and means for moving the same rectilinearly, said switch comprising: a support adapted to be fixed adjacent one edge of said felt; a lever pivoted between its ends on said support; a cam pivoted on one end of said lever and having a cam surface adapted to be moved by the adjustment of said cam about its pivot axis toward and from said edge; and a circuit closer including means connected to said lever for holding said cam with its surface in yielding contact with said edge.

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