June 16, 1953 A. D. CAPEHART ET AL 2,642,490

CLOCK CONTROL TIME PERIOD SIGNAL DEVICE

Filed Nov. 17, 1950 2 Sheets-Sheet 1

Fig. 1.

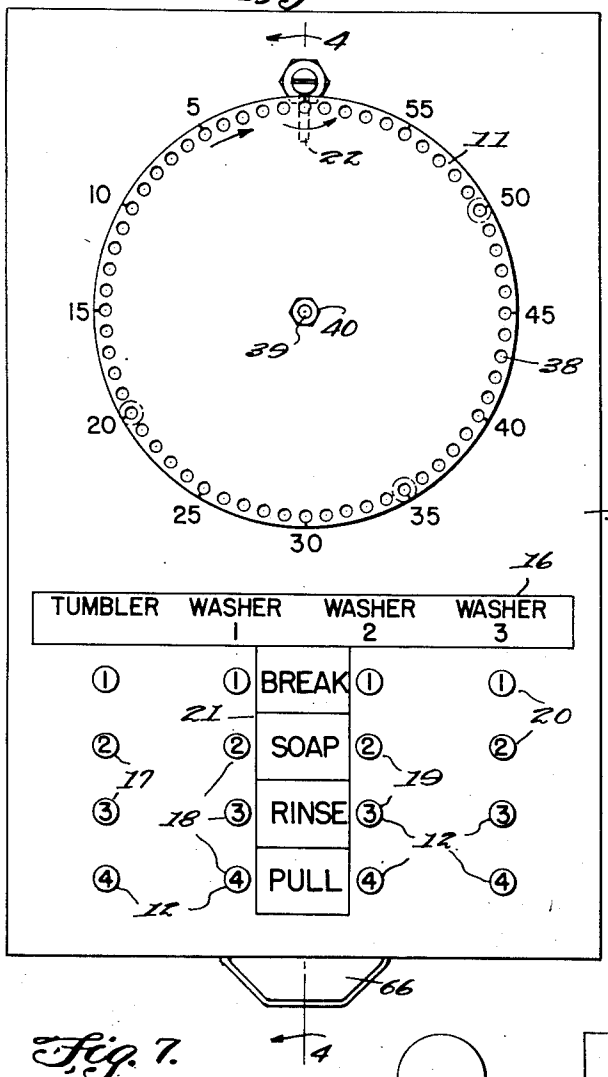


Fig. 2.

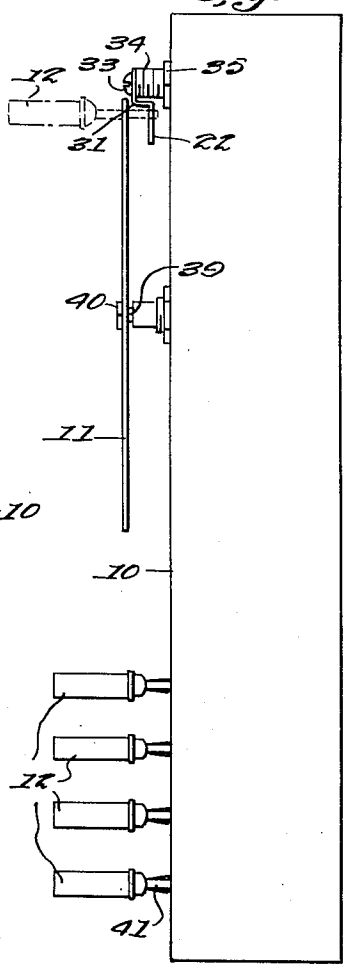
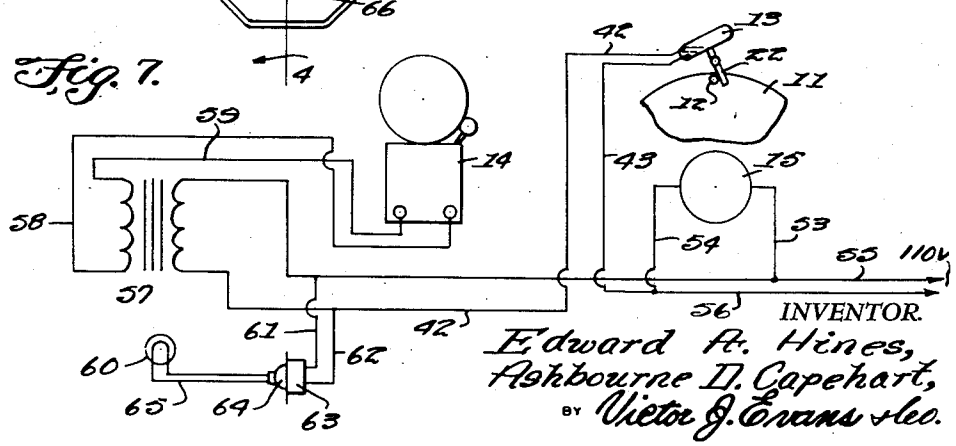


Fig. 7.



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Filed Nov. 17, 1950 2 Sheets-Sheet 2

Fig. 3.

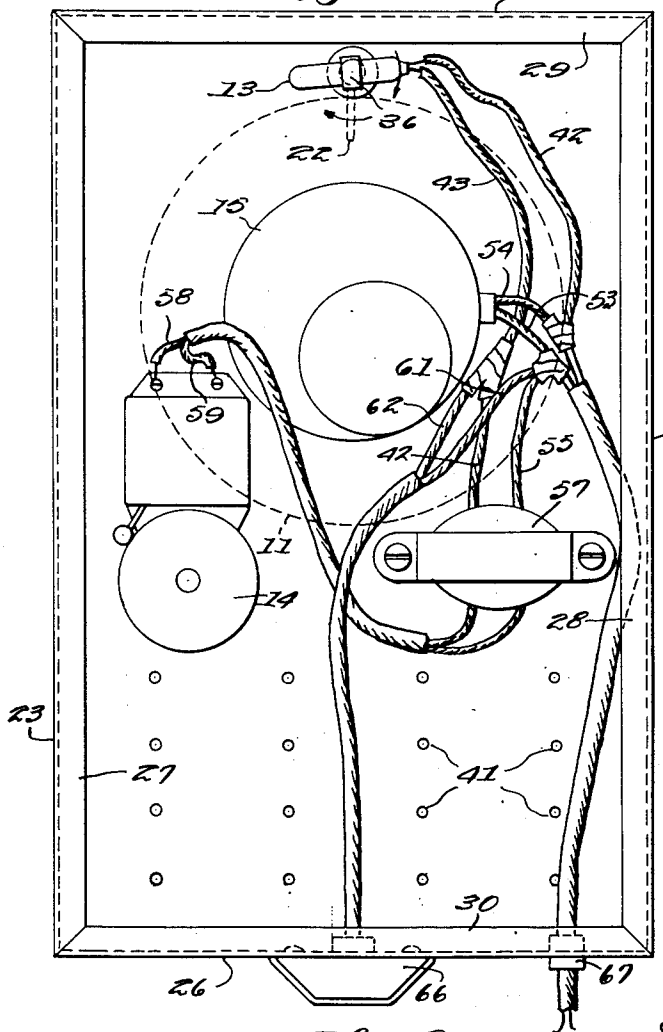


Fig. 4.

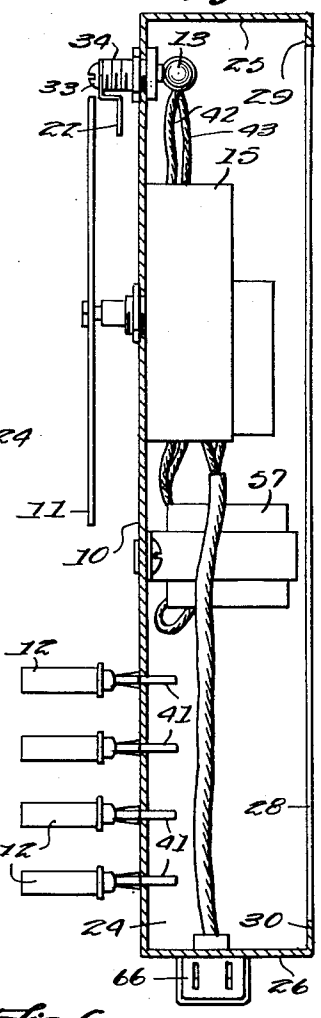


Fig. 8.

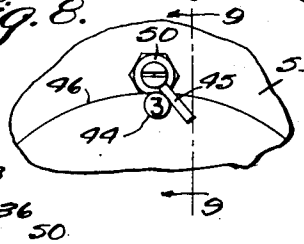


Fig. 6.

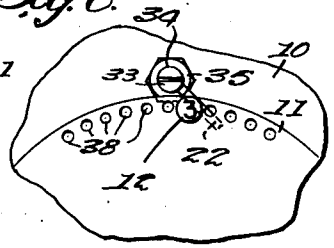


Fig. 5.

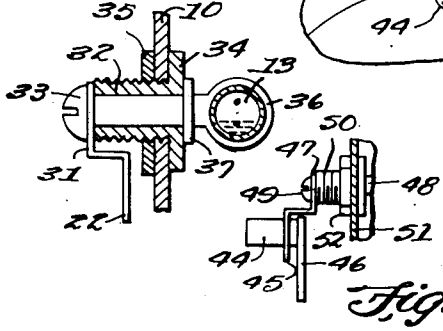


Fig. 9.

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CLOCK CONTROL TIME PERIOD SIGNAL DEVICE

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Application November 17, 1950, Serial No. 196,327

3 Claims. (Cl. 340—324)

1

This invention relates to clock mechanism actuated time period alarm and signal devices particularly where it is desirable to provide an audible signal at the end of a period or at the ends of periods of time, and in particular an instrument having a panel in the form of a control board with a disc having perforations in the periphery for receiving pins normally carried in an indicating area on the panel, and a switch positioned to be actuated by pins in the perforations of the disc and connected in a circuit to a bell or other alarm or signal device.

The purpose of this invention is to provide a combination signal device, particularly adapted for a laundry or dry cleaner having batteries of tumblers and washers and wherein it is desirable to time the washers for different stages wherein signals are set up to correspond with the different machines and wherein as one signal is actuated a signal for another stage of the machine may readily be set up.

In the conventional commercial laundry where batteries of machines are used it is desired to operate the machines in different stages at different time periods for each stage and, particularly with the washers it is desired to run materials through a "break period," a "soap period," a "rinse period," and a final period which is commonly called the "pull" stage. Where there are a plurality of machines with each machine washing clothes through these different stages it is difficult to set the time period for each machine.

With this thought in mind this invention contemplates a control panel which includes a chart with pins colored to correspond with different machines and with a clock actuated perforated disc whereby the pins of different colors are placed in the perforations of the disc for actuating a switch that gives a signal at the expiration of a period of time.

The object of this invention is, therefore, to provide means for constructing a control panel whereby one panel may be used for indicating the ends of time periods for a battery of machines with each machine operating through a plurality of stages and with the time periods of the different stages of different lengths.

Another object of the invention is to provide a control panel for indicating the expiration of time periods of a plurality of machines that is provided as a separate and independent unit and may be operated without being connected to the machines.

A further object of the invention is to provide a control panel for a battery of machines which is of a simple and economical construction.

2

With these and other objects and advantages in view the invention embodies a control panel having a disc with perforations in the edge thereof journaled on the panel and actuated by a clock mechanism positioned on the back of the panel, a mercury switch also positioned on the back of the panel and having an arm extended to be engaged by pins in the perforations of the disc, and a chart on the face of the panel having openings therein for storing the pins with the pins positioned to correspond with the different machines.

Other features and advantages of the invention will appear from the following description taken in connection with the drawings wherein:

Figure 1 is a front elevational view showing the face of the panel.

Figure 2 is a side elevational view showing one end of the panel.

Figure 3 is an elevational view looking toward the back of the panel.

Figure 4 is a vertical cross section through the panel taken on line 4—4 of Figure 1.

Figure 5 is a detail showing a section through the mercury tube mounting on the panel.

Figure 6 is a detail illustrating the position of the arm for actuating the mercury tube.

Figure 7 is a wiring diagram illustrating the connections of the parts with the circuits of the elements extended to the source of power supply.

Figure 8 is a detail similar to that shown in Figure 6 illustrating a modification wherein a plurality of small magnets are used instead of the pins.

Figure 9 is a section similar to that shown in Figure 5 illustrating one of the magnets positioned to operate the mercury switch.

Referring now to the drawings wherein like reference characters denote corresponding parts the time period signalling device of this device includes a control panel 10 having a disc 11 journaled therein and positioned on the face thereof, a plurality of pins 12, a mercury switch 13, a bell 14 and a clock motor 15.

In the design shown the panel 10 is of an elongated rectangular shape and the lower part is provided with a chart having a name section 16 with a row of openings 17 on one side positioned below the word "tumbler," a row of openings 18 positioned below the washer represented as number 1, a row of openings 19 positioned below a washer indicated as number 2, and a row of openings 20 positioned below a washer represented as number 3. The chart is also provided with a column 21 in which the first line of openings of the washers is indicated by the word "Break,"

the second line with the word "Soap," the third line with the word "Rinse" and the fourth line with the word "Pull." By this means an operator can tell at a glance which of the pins of the different washers has operated the arm 22 and thereby closed the mercury switch.

In the design shown the panel 10 is formed with flanges 23 and 24 at the sides, a flange 25 at the upper end and a flange 26 at the lower end, and the flanges are provided with inwardly extended strips 27, 28, 29 and 30, respectively, that are formed to be positioned against the face of a wall or the like.

The arm 22, which is formed with an offset mounting end 31 is mounted on the end of a shaft 32 by a screw 33 and the shaft is journaled in the bushing 34 that is secured in the panel 10 by a lock nut 35. The inner end of the shaft 32 is provided with an eye 36 in which the mercury tube 13 is positioned and a flange 37 may also be provided to hold the shaft against the inner end of the bushing 34, as shown in Figure 5.

The disc 11, which is provided with perforations 38 is secured on the shaft 39, extended from the clock mechanism 15 by a nut 40, and with the disc mounted in this manner the pins 12, which are provided with extended spring fingers 41 are removed from the openings in the lower part of the panel and placed into the openings of the disc 11 whereby the spring fingers 41 thereof engage the contact arm 22 so that as a pin passes the switch at the upper end of the panel the arm 22 is actuated, as illustrated in Figure 6 whereby the mercury tube is turned about the center of the shaft 32 so that mercury in the tube bridges contacts extended into one end thereof from wires 42 and 43, as illustrated in the wiring diagram in Figure 7.

In the design illustrated in Figures 8 and 9 the pins 12 are replaced by magnets 44 and, in this design, an arm 45, similar to the arm 22 extends over the peripheral edge of a disc 46, similar to the disc 11, and with the magnets positioned to correspond with the perforations 38 the arm 45 will be actuated similar to the arm 22.

The arm 45 is provided with an offset end 47 and the end 47 is secured to the outer end of a shaft 48 by a screw 49 similar to the screw 33. The shaft 48 is journaled in a bushing 50 in a panel 51, similar to the panel 10 and the bushing is secured in position by a lock nut 52. The shaft 48 is provided with a mercury tube, similar to the tube 13 and the tube is positioned to be actuated to close a circuit as one of the magnets moves the arms 45.

As illustrated in Figure 7 the clock motor 15 is connected by wires 53 and 54 to wires 55 and 56, respectively, which extend to a suitable source of current supply.

The wire 55 extends to one side of a transformer 57 with the wire 56 also connected to the transformer through the wires 43 and 42. The opposite side of the transformer is connected by wires 58 and 59 to the bell 14 and, as illustrated in Figure 7, when the mercury switch is actuated by one of the pins or magnets so that the terminals therein are closed a circuit is completed to the transformer and from the transformer to the bell.

The circuit may also be provided with a signal light 60 which is connected across the wires 55 and 42 by wires 61 and 62, with the wires provided with a socket 63 in which a plug 64 of the lamp cord 65 is positioned.

The supply wires may be connected to a socket 66 on the lower flange 26 of the panel 10 so that the signal light 60 may be plugged in as desired. The power wires 55 and 56 may also extend through a connector 67 in the flange 26, as shown in Figure 3.

With the time period indicated in minutes on the face of the panel 10 and positioned around the disc 11 an operator may take the first pin of the first washer from the chart on the lower end of the panel and place it in an opening on the disc corresponding with the number of minutes it is desired to keep the clothes in the break stage, such as 20 and at the expiration of 20 minutes the pin will reach the top where it will engage the arm 22. At this point the arm 22 is moved to one side whereby it actuates the mercury switch when the mercury switch closes the circuit to the bell 14.

At the same time the pin from the soap period or stage of the washer 2 may be removed from the opening below and placed in an opening corresponding with the number of minutes it is desired to keep the materials in the soap stage, such as 35 and when the pin placed in the 20 minute opening reaches the top the second pin in the 35 minute opening reaches the point of the 15 minute opening and after the pin indicating the 20 minute period has actuated the switch and has been removed the operation of the disc continues and at the expiration of another 15 minutes the pin in the 35 minute period actuates the signal.

At the same time should it be desired to rinse clothes in the third washer 50 minutes the pin from the third washer is placed in the opening corresponding with the 50 minute period, as indicated in Figure 1 and even though several pins are placed in between the operator does not disturb the third washer until the pin in the 50 minute opening reaches the arm 22.

By the same means pins of the tumbler are placed in suitable openings and as the disc 11 operates continuously, each pin placed in the disc has its mission to perform and operates the signal when it reaches the top.

With the parts arranged in this manner the disc 11 operates continuously and with the minute time indicating numerals remaining stationary on the panel a plurality of pins may be placed in the disc at any time with each pin placed at a different time period indication. As the pins actuate the switch they are removed and replaced in the opening in the lower part of the panel.

It will be understood that other modifications may be made in the design and arrangement of the parts without departing from the spirit of the invention.

What is claimed is:

1. A time period indicator comprising a box like housing having a chart on the face thereof, said chart having rows of areas corresponding with different machines indicated thereon, pins positioned in said areas, a disc journaled on the panel and positioned on the face thereof, said panel having time periods thereon positioned around the disc and said sections of the chart being spaced to correspond with said time periods positioned around the disc, means rotating the disc at a predetermined speed, a signal, a mercury switch mounted on the panel and positioned to be actuated by a pin on the disc, means temporarily mounting said pins at different points on the disc, and a circuit connecting the mercury switch and the signal to a source of power.

2. In a time period indicator, the combination which comprises a control panel having a chart with spaced rows of openings therein, a disc having perforations in the peripheral edge journaled in the panel and positioned on the face thereof, said panel having time periods thereon positioned around the disc, means for rotating the disc at a predetermined speed, a signal, a mercury switch pivotally mounted on the panel, a plurality of pins of different colors removably positioned in the openings of the chart of the panel, an arm pivotally mounted on the panel, connected to the said mercury switch, and positioned to be actuated by a removable pin from said plurality of pins in one of the openings in the edge of the disc, and a circuit connecting the signal and switch to a source of current supply.

3. A non-arcing, non-explosive time period indicator comprising a control panel having a chart thereon, said chart having rows of areas corresponding with different machines indicated thereon, pins positioned in said areas, a disc journaled

in the panel and positioned on the face thereof, said panel having time periods thereon positioned around the disc and said sections of the chart being spaced to correspond with said time periods positioned around the disc, means rotating the disc at a predetermined speed, a signal, a mercury switch mounted on the panel and positioned to be actuated by one of said pins positioned on the disc, means temporarily mounting said pins at different points on the disc, and a circuit connecting the mercury switch and the signal to a source of power.

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