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POWER FAILURE ALARM

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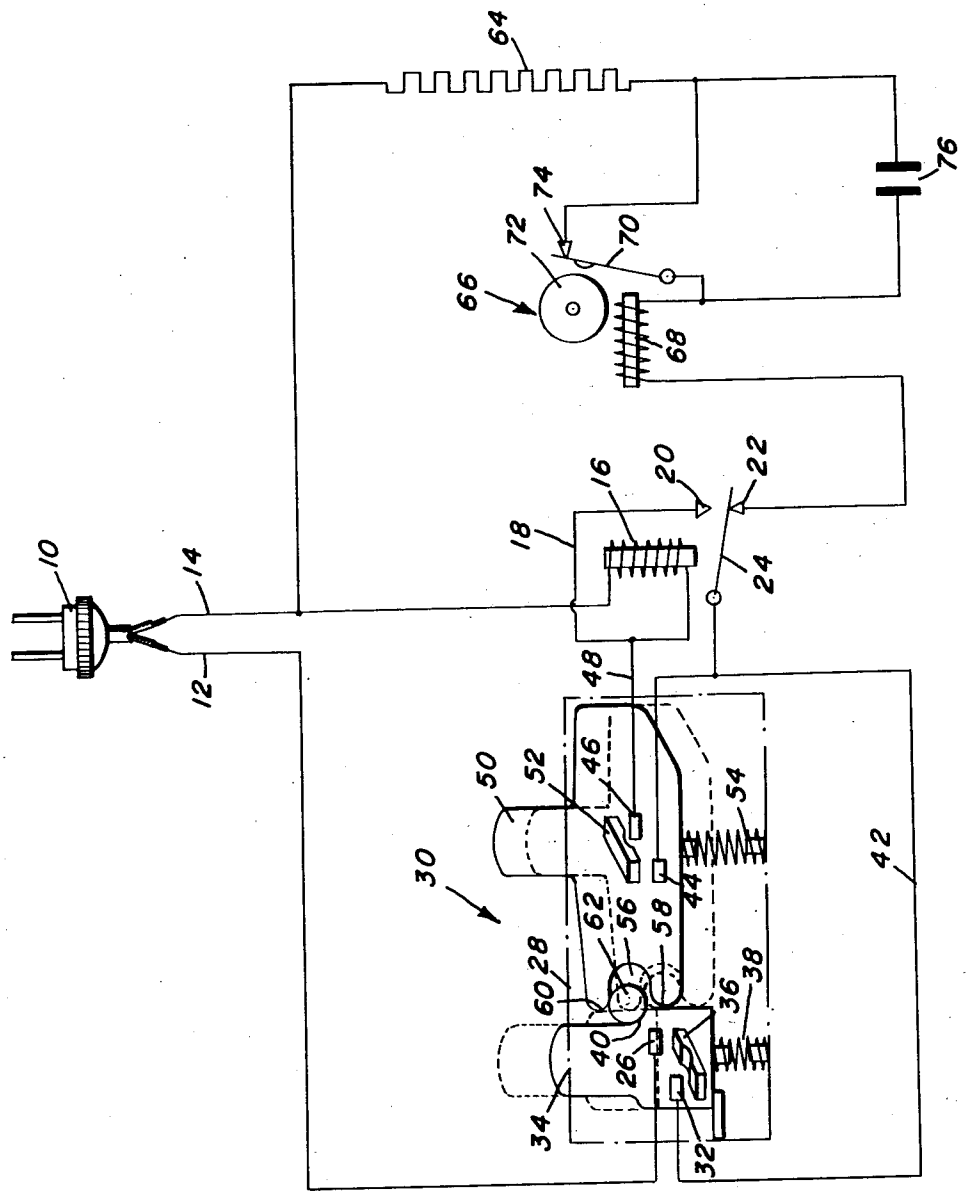

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POWER FAILURE ALARM

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1 Claim. (Cl. 177—311)

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This invention relates to a power failure alarm designed to automatically signal when electrical power is restored to a circuit, should a failure occur.

An object of this invention is to advise a person depending upon an electric alarm clock to reset his slow or stopped clock after power failure has caused it to cease running for a time.

A further object of the invention is to provide a selective switching circuit which will actuate the alarm only after power failure when the current is restored.

A further object of the invention is to provide simple means to re-set the power failure alarm.

These, together with various ancillary objects of the invention which will later become apparent as the following description proceeds, are realized by this invention, a preferred embodiment of which has been illustrated by way of example only in the accompanying drawing, wherein is shown a circuit diagram of the power failure alarm.

The reference numeral 10 designates an electric plug adapted to be connected to a power source. Connected to the plug are a pair of electrical conductors 12 and 14. The conductor 14 is connected to one terminal of a solenoid 16 which is connected by means of conductor 18 to a first switch contact 20. A second switch contact 22 is positioned adjacent the first switch contact 20. A switch 24, actuated by the solenoid 16 and adapted to contact switch contact 22 when not held by current going through solenoid 16, and to switch contact 20 when actuated by the solenoid, is inserted between the switch contacts 20 and 22.

The conductor 12 is connected to a fixed contact 26 on the case 28 of the selective switch assembly generally designated by reference numeral 30. Another switch contact 32 is positioned adjacent the fixed contact 26. A push button 34 having a yoke conductor 36 mounted therein and made of an insulating plastic, such as Bakelite, is biased by coil spring 38 upwardly. The yoke 36 is mounted below the fixed contacts 26 and 32 and is urged to contact the fixed contacts by the action of the biasing spring 38. The button has a shoulder portion 40 extending peripherally therearound. A conductor 42 is connected to fixed contact 32 at one end and is connected to a fixed contact on the case 28 spaced from the first set of fixed contacts. This fixed contact is designated by reference numeral 44. Adjacent the fixed contact 44 and mounted on

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the base 28 is another fixed contact 46 connected to conductor 18 by means of conductor 48. A push button 50 of plastic, non-conductive material and having a conducting yoke 52 mounted therein and adapted to contact fixed contacts 44 and 46, and mounted thereover, is upwardly biased by coil spring 54. The button 50 has a substantially semi-spherical recess 56, thus forming bearing surface 58 and the somewhat further extending retaining surface 60. A rolling bearing 62 is inserted in the recess 56 and is adapted to engage the shoulder 40 of the push button 34.

A resistor 64 is connected to conductor 14 in order to reduce the voltage across the alarm, generally designated by reference numeral 66. The alarm comprises a solenoid 68 actuating vibrator switch 70 which vibrates against bell 72 and contact 74. Condenser 76 is used to reduce the sparking of the bell 72 on breaking contact with the vibrator 70.

The operating procedure of this device is as follows: The plug 10 is inserted into the desired outlet of a source of current. The alarm is then set by depressing button 50, thereby closing contacts between fixed contacts 44 and 46 by means of yoke 52. When button 50 is depressed, as is shown by dotted lines in Figure 1, the bearing 62 is encompassed by recess 56 and is disengaged from the shoulder portion 40. This allows push button 34 to rise, and allows yoke 36 to bridge fixed contacts 26 and 36. The solenoid 16 is then actuated, causing switch 24 to contact switch contact 20. This will break the contact between the switch 24 and the fixed contact 22. The button 50 is then released, maintaining a circuit through conductors 12, 42, switch 24, and conductor 14, as can be easily seen.

On failure of current from this source, the solenoid 16 releases the switch 24, allowing the switch 24 to contact switch contact 22 and open the circuit through the solenoid 16.

When power is restored, a closed circuit consisting of conductor 12, yoke 36, conductor 42, switch 24, contact 22, solenoid 68, resistor 64, and conductor 14, is then evident, the solenoid 68 causing the vibrating switch 70 to sound the bell 72. The bell, therefore, aurally designates the return of power to the power failure alarm. The bell may be manually stopped from sounding by depressing button 50, thus re-energizing solenoid 16, or by depressing button 34, thus breaking the circuit of the alarm.

Since numerous embodiments may be utilized falling within the spirit and principles of the invention, it is not desired to limit the latter to the

exact construction shown and described, except as required by the scope of the following claim.

Having described the invention, what is claimed as new is:

An alarm device for indicating return of current to a circuit comprising a pair of conductors connected to a source of current, a relay solenoid having one terminal connected to a first of the pair of conductors and having the other terminal connected to a first switch contact, a second switch contact adjacent said first switch contact, a relay-actuated switch connected to a switch circuit actuated by said relay solenoid positioned between said switch contact selectively contacting said switch contacts, an alarm circuit terminally connected to said second switch contact and said first conductor, said switch circuit comprising a first switch connected to said relay actuated switch and to the second of said conductors, means urging said first switch into a closed circuit position, a second switch terminally

connected to said first switch contact and said relay operated switch, means urging said second switch into an open circuit position, and locking means carried by said second switch locking engaging said first switch holding said first switch in an open circuit position when said second switch is in a circuit open position.

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