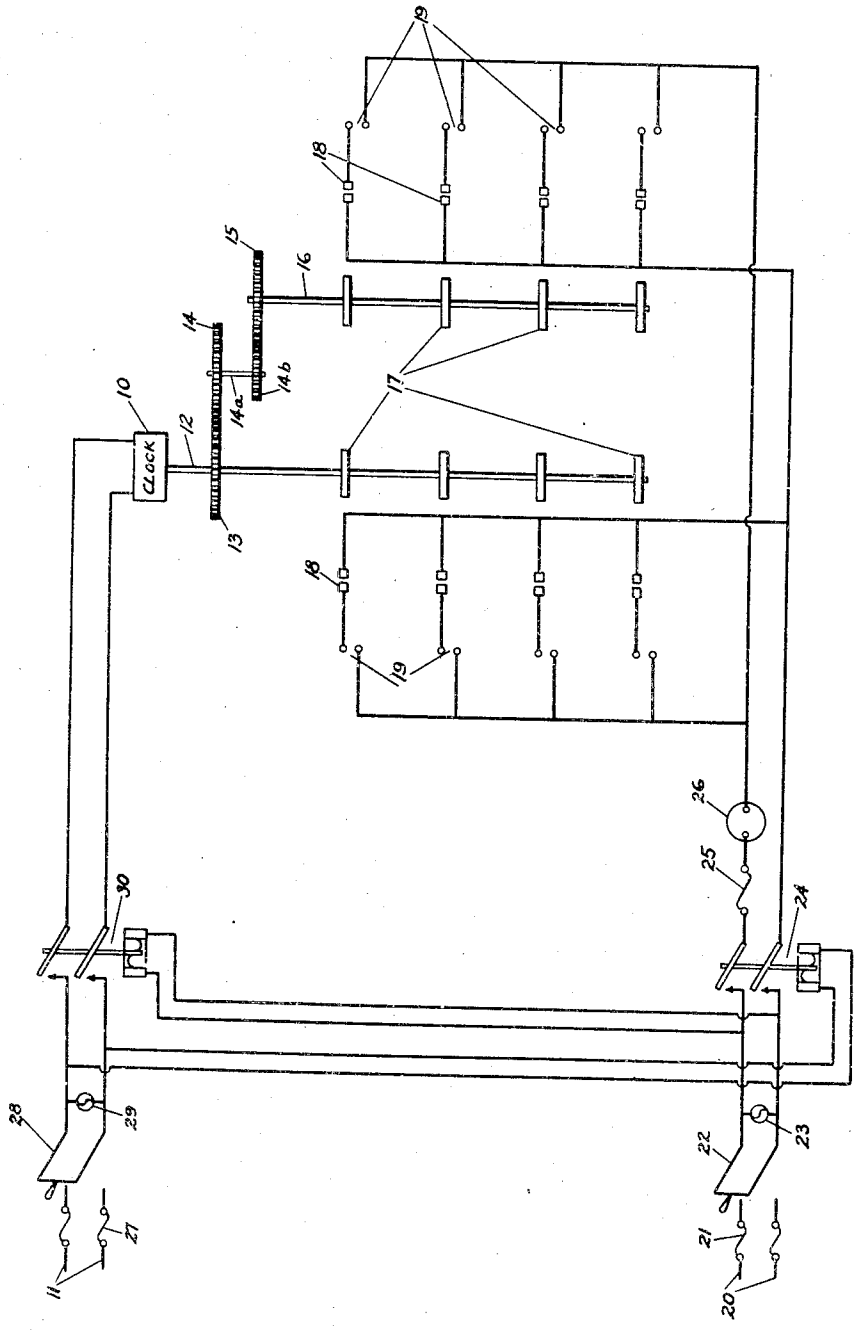
May 31, 1949. R. H. GRANT 2,471,426

TIME CYCLING DEVICE

Filed Oct. 26, 1945



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Patented May 31, 1949

2,471,426

UNITED STATES PATENT OFFICE

2,471,426

TIME CYCLING DEVICE

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Application October 26, 1945, Serial No. 624,913

2 Claims. (Cl. 161—1)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

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This invention relates to a time cycling device.

An object of this invention is to provide an automatic means of obtaining timing cycles for the purpose of conducting laboratory life tests of a cycling nature.

Another object is to provide a centralized system for obtaining a plurality of different timing cycles.

Another object is to provide a central system, whereby a plurality of predetermined timing cycles can be obtained concurrently.

Further objects and advantages of this invention, as well as its construction, arrangement and operation, will be apparent from the following description and claims in connection with the accompanying drawing, which is a schematic diagram of the timing cycling device.

As shown in the drawing, a synchronous motor or electric clock 10 may be operated by means of alternating current in supply line 11. Shaft 12 and gear 13 are driven by clock 10. Gear 13 engages gear 14, driving shaft 14*a* and gear 14*b*, which engages gear 15 attached to shaft 16. Attached to shafts 12 and 16 are cams 17.

Shaft 16 is geared to rotate at a speed different from that of shaft 12. Additional shafts for additional speeds may be added. As the shafts are rotated by the clock 10 cams 17 rotate and engage microswitches or timing switches 18, making and breaking contact. Each cam is cut to provide a different time interval for the making and breaking of contact. Any number of breaks may be obtained for each revolution of the cam depending upon the contour of the cam.

Terminals 19 may be connected to any device, and direct current or alternating current furnished thereto from a suitable source by means of supply line 20.

In addition there are placed in the time cycle current supply line fuses 21, supply switch 22, pilot light 23, relay 24 operated from the alternating current line 11, fuse 25 and ammeter 26. In the alternating current line there are fuses 27, supply switch 28, pilot light 29, and relay 30 operated from the time cycle supply line 20.

In operation, any equipment that it is desired to have supplied with periodic periods of electrical power is connected to one of the pairs of terminals 19. One example of construction would be to have three shafts such as 12 and

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16: one to rotate at one R. P. M., one at one revolution per hour and the other at one revolution every twelve hours. Then by providing cams 17 with suitable contours a considerable variety of predetermined time cycles can be obtained. Terminals 19 may be located on a panel for central distribution through "plug-in" circuits to various parts of the laboratory for any suitable purpose.

Ammeter 26 gives a reading of the total load on the cycling circuit. The pilot lights 23 and 29 indicate when the circuits are energized. The two relays 24 and 30 are so energized that upon the failure of either of the two supplies 11 or 20 both circuits are deenergized, one by cessation of supply current and one by opening of its relay. This gives protection to the equipment under test. Otherwise, for example, if the alternating current should fail and the clock stop with a microswitch in closed position a continuous direct current would be supplied through the microswitch which might be injurious to the equipment being tested.

It is to be understood that various modifications and changes can be made in this invention without departing from the spirit and scope thereof as set forth in the appended claims.

The invention described herein may be manufactured and use by or for the Government of the United States of America for governmental purposes without the payment of any royalties thereon or therefor.

I claim:

1. A time cycling system for laboratory tests comprising a synchronous motor, a plurality of timing switches adapted to be actuated by said motor, a pair of power input circuits one adapted to drive said motor and the other connected to said timing switches, an output circuit connected to said switches and provided with terminals for connecting apparatus under test, and two relays, each of said relays being energized from a respective one of said input circuits and having contacts arranged to open the other of said input circuits upon deenergization of said respective one of said input circuits.

2. A time cycling device to provide a centralized system for obtaining a plurality of timing cycles for conducting laboratory life tests comprising a synchronous motor, a plurality of cams driven by said motor, a plurality of timing switches re-

sponsive to said cams, a pair of power input circuits one adapted to drive said motor and the other connected to said switches, a plurality of output circuits connected to said switches and provided with terminals to furnish power at different predetermined time cycles, and two relays, each of said relays being energized from a respective one of said input circuits and having contacts arranged to open the other of said input circuits upon deenergization of said respective one of said input circuits.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,184,657	Paul	May 23, 1916
1,940,411	Frischpnecht	Dec. 19, 1933
2,089,917	Mitchell	Aug. 10, 1937
2,112,093	Harty	Mar. 22, 1938
2,317,588	Clayton et al.	Apr. 27, 1943