

A means of providing an irregular wheel movement  
in Cipher Machines using cipher wheels.

The basic principle of this invention utilizes the cipher wheels of the cipher machine to provide an irregular selection of the particular wheel which is to be moved. A method of effecting this selection is to provide, in addition to the present ring of 26 contacts on each face of the wheel, a second ring of 26 contacts, which contacts are independent of the first mentioned set of contacts, but are connected to each other in an irregular manner, analogous to the manner in which the first mentioned set of contacts are connected. Also the end plates will bear a double ring of contacts which coincide exactly with the two rings of contacts on the face of each cipher wheel. These two rings of contacts on each end plate are connected as indicated in Figs. 1 and 2 of the attached drawing.

The action of the machine is as follows: When a key is depressed, two contacts are closed, namely, (1) the key contact which allows a current to pass through one of the above-mentioned rings of contacts to operate an indicating device giving the encipherment of the letter corresponding to said key and (2) a universal contact which permits current to enter at a single contact of the other of the aforementioned rings of contacts on one of the end plates, pass through one of the contacts of the corresponding rings of contacts of all the cipher wheels, and pass out at one of the contacts on the corresponding ring of contacts of the other end plate, and thence to a selecting magnet which permits the cipher wheel corresponding

thereto to move forward.

Figure 1 is a schematic diagram of the invention. 1, 2, 3, 4, and 5 are the hereinbefore described cipher wheels; 19 and 20 are the end plates, 6, 7, 8, 9, 10 are the wheel selector magnets which allow a mechanism to step one of the wheels forward at each depression of a key; 11 and 13 are the rings of contacts through which the current passes to the wheel selector magnets; 12 and 14 are the rings of contacts through which the "key to lamp" current passes; 15 is the key contact; 16 is the above-mentioned universal bar contact; 17 is the source of power; 18 the reversing switch; 21 is the indicating device; and 22 is the connection to the universal contact which may be connected to any contact of the rings of contacts 11 on end plate 19.

Fig. 2 shows one manner in which the ring of contacts on end plate 20, through which the current passes to the selector magnets, are connected to the wheel selector magnets.

*Frank B. Rowlett*  
*June 29, 1935*

*Witness:*

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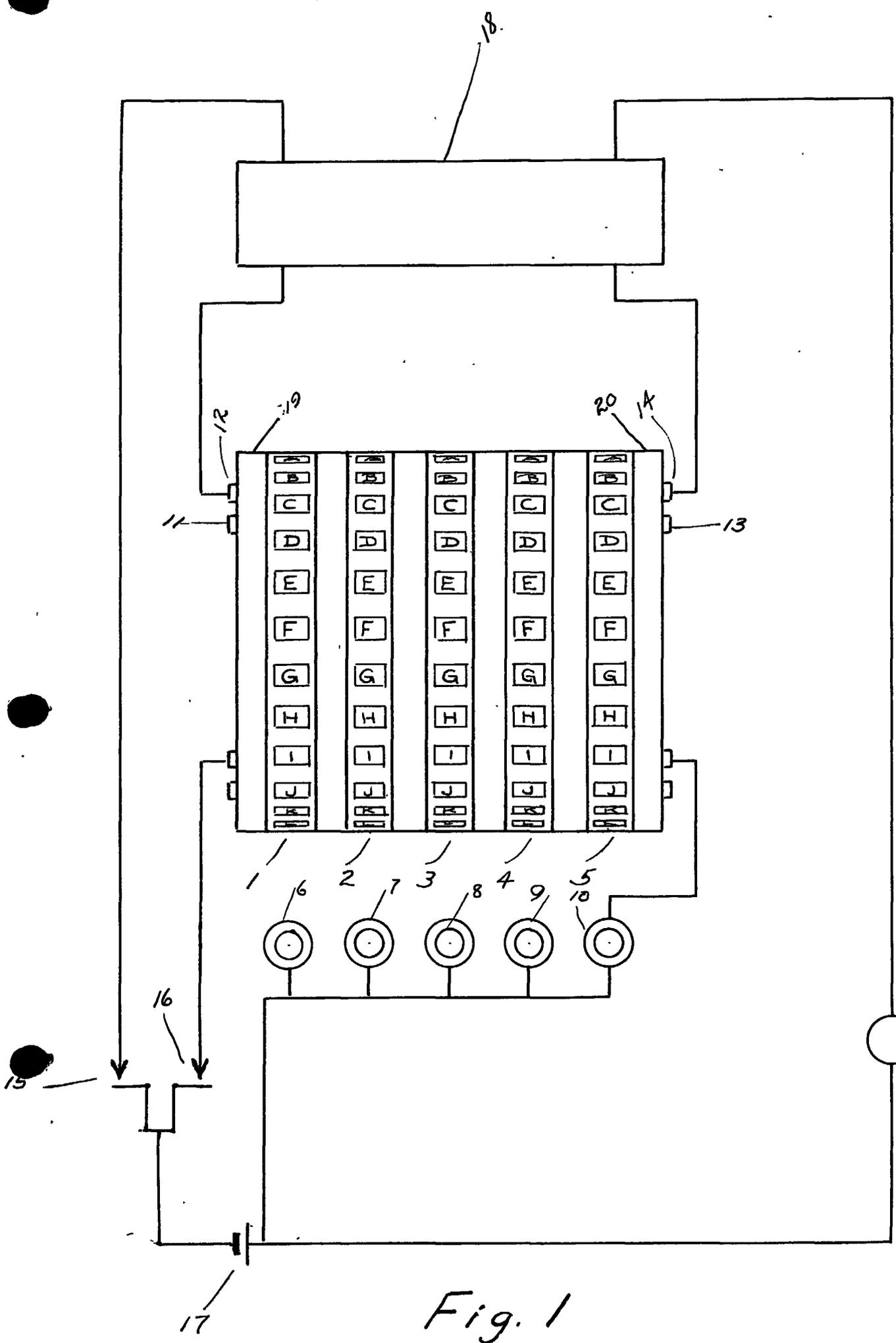


Fig. 1

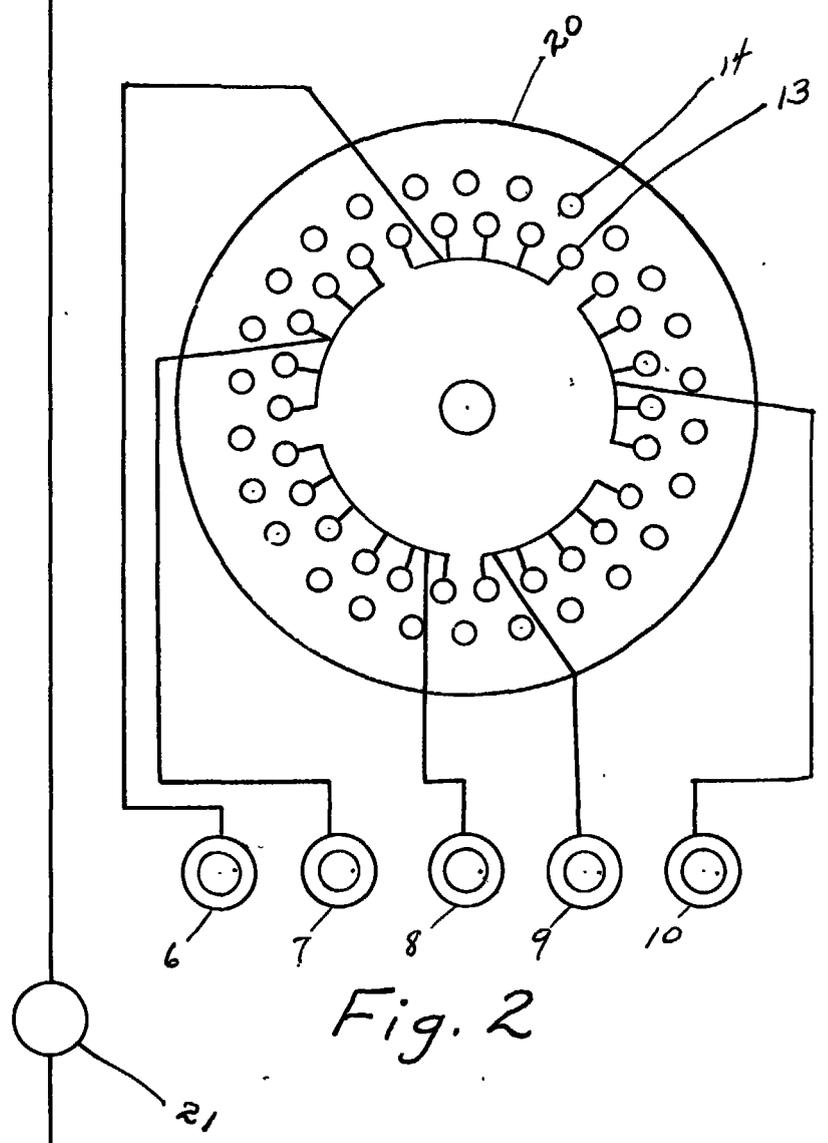


Fig. 2

Solenoids of printer

Keys

Switch

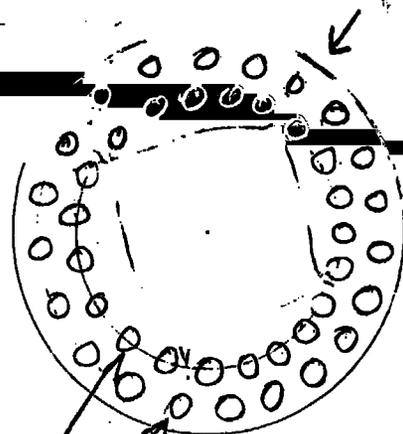
Cipher wheels

Control magnets

Universal bar switch or relay operated at proper instant of printing cycle.

Cipher wheels have 2 independent rings of contacts. Inner set will control printer outer set will control printer circuit.

Side view of



Outer circle of contacts to reversing switch

Inner circle to cipher wheel control magnets. These may be connected at random or in sets of 5, 5, 5, 5, to control magnets.

Outer set to reversing switch

This drawing was disclosed to W. F. Friedman June 15, 1935. In view of the fact that the drawing to T. H. Monmouth also shown to S. L. Braden. J. P. [unclear] June 28, 1935.

Inner circle of contacts set of jacks for single plug

(Two plugs may be provided, giving irregular selection of either one or more wheels)