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rotor-reflector assembly, line 20, switch 22, line 11C, lamp 13E, line 12, back to battery 10. Lamp 13E would be illuminated, giving E as the plain-text equivalent of Z. At the same time the lamp 13Z would also be lighted by the closing of switch 17Z and by a circuit which is essentially similar to the one described in connection with the closing of switch 17E. Thus, since rotors 19 connect all the lamps 13A, 13B, etc., and all the switches 17A, 17B, etc., together in pairs, each letter has another corresponding to it.

For rotating the cryptographic rotors 19 and thus varying the connections between the various pairs of lamps 13 and switches 17, the plunger 38 is depressed, stirrup 40 is rotated about its pivots and the members 53A, etc., moved. A pawl 58 will normally ride on a rim 57 of a rotor, and, under these conditions, its associated cam face 55 can not enter a ratchet depression to step an adjoining rotor notwithstanding the urging of its spring 54. As soon, however, as a pawl falls into a pawl notch 55D it and its cam member move upwardly somewhat and toward the rotors and the latter engages a ratchet depression. Then, on movement of stirrup 40, the rotor in question is stepped. It will be noticed that, in view of the manner in which tang 59 of device 53A underlies device 53B, etc., device 53A can not move upwardly unless device 53B has so moved. The pawl member of device 53D rises on each operation of stirrup 40, as it drops over shoulder 58' of member 60'. The result is that rotor 19E steps each time the stirrup 40 moves, rotor 19D steps once for each revolution of 19E, 19C steps once for each revolution of 19D, etc. \*

Whenever a cam 55 drops into a notch 56, and the movement of the plunger 39 is completed, the corresponding rotor 19 is moved one step. This re-arranges the connections through the rotors

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and connects different pairs of lamps 13A.  
 \* It is, in other words, the cam gear 55 engaged in a peripheral slot 56 and impelled by rotary motion imparted to it by plunger 38-39 which actually serves to step the rotors ~~CONFIDENTIAL~~ into one of the notches until the cooperating pawl enters an auxiliary notch 55D.