REF ID:A4148568

2nd variant

2 pole Permutation switch. P_x – interchanges polarity reverses. 28 pts

2 pole " " P_y – " order of contacts S" C 28 pts

1 pole " " P_z " order of condensers 28 pts

1 pole " " P_w " order of magnets among contacts B

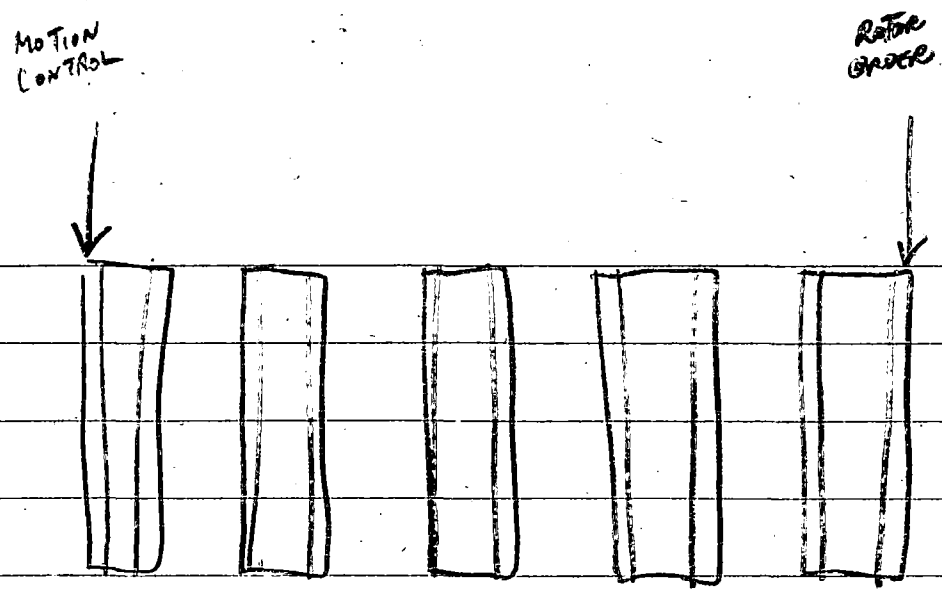
[~~wiring~~ wiring of the 4 permutation switches is now by plugging]

P_y and P_z are now mounted on shaft – {~~automatically~~ advanced}

P_x is set only by hand (stays fixed)

(P_w is eliminated)

Approved for Release by NSA on 11-18-2014 pursuant to E.O. 13526



64

Let rotor orders be dependent on a notch configuration at a given setting:

Only 2^5 or 32 possible combinations (and there are 5! rotor orders)

32 | 120 / 128

120
128

Are 2^5 (32) permutations sufficient?

REF ID:A4148568

Each set of the above wirings picked (under the scheme below) is enclosed in a permutation switch; the chain is shifted by hand and remains fixed for a message. (This is equivalent to a slide of a known wiring.

Additional Keying Elements.

X_1 to X_{14} - for interchanging the polarity reversers so that a new sequence can be formed in the chain of these reversers.

Y_1 to Y_{14} - for changing the order of pinwheel make and break contact S'' in the chain of polarity reversers.

Z_1 to Z_{14} - for interchanging the order of the storage condensers in the chain of polarity reversers.

W_1 to W_{14} - for interchanging the order of the control magnets (each of which is associated with a specific pinwheel) among the pinwheel contacts S'''

Substitutions take place within a series, thus x with x_1, y with y_1 etc.

REF ID:A4148568

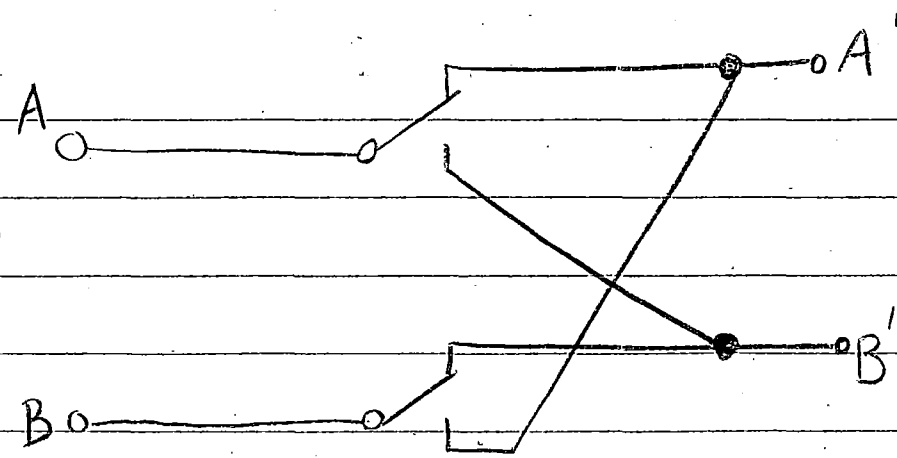
Gretener-Hagedorn.

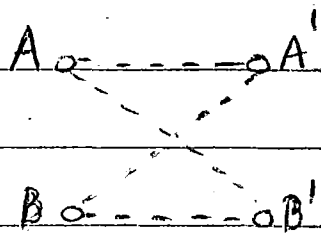
$P + K = C$ $\overset{S}{\cdots}$

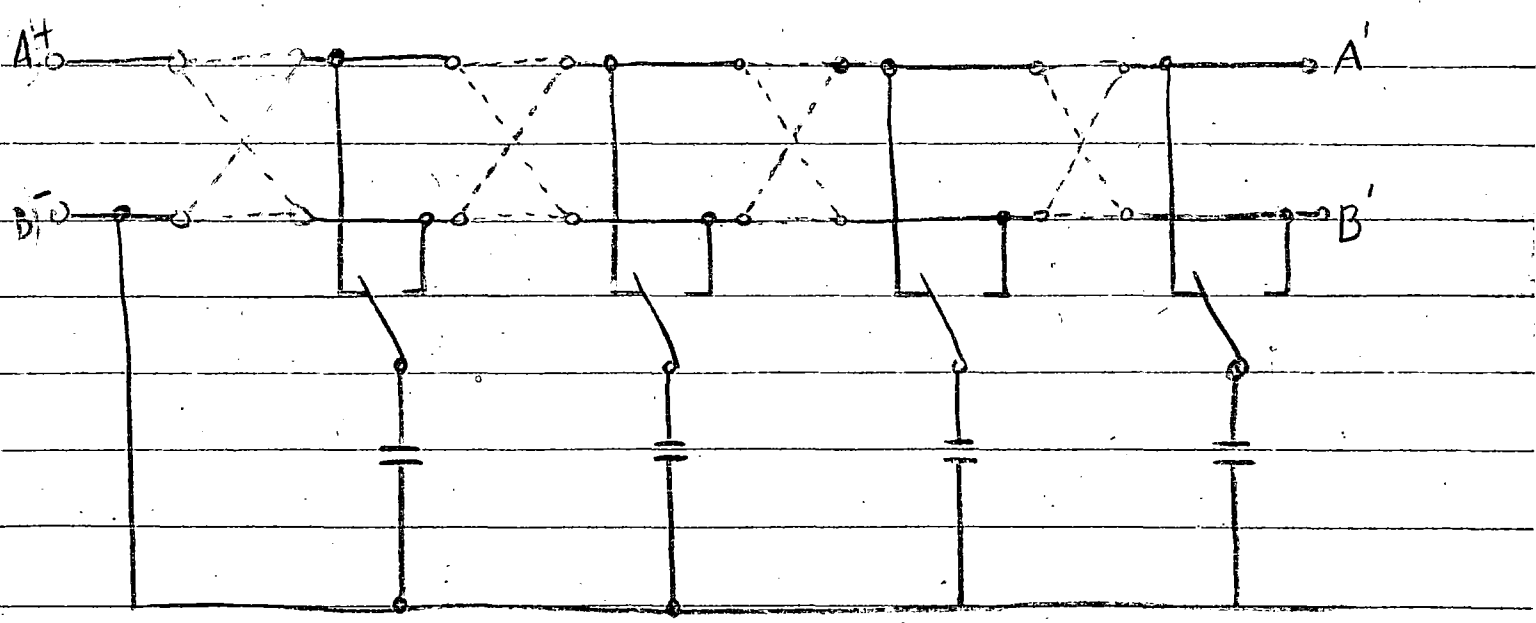
S_1' S_4' S'''

Readable in depths of two?

As shown in ~~author's~~ descriptive write-up, the pin wheels are not of prime size.


A
A'
B
B'


A
A'
B
B'


A
A'
B
B'

2
2 4
2 8
2 6
2 2
2 4
2 8
2 6
2 2
2 4
2 8
2 6
2 2
2 4