

IN REPLY  
REFER TO

WAR DEPARTMENT  
OFFICE OF THE CHIEF SIGNAL OFFICER  
WASHINGTON

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February 15, 1936

1. In connection with a memorandum dated August 31, 1935, (copy attached) setting forth "certain facts in connection with the invention of several alternative means of providing an aperiodic displacement of the substitution cipher wheels of a cipher machine as granted in claim 17 of the patent specifications having reference to Converter Type M-134-T2," the following additional facts are made of record:

2. The principle of employing a set of juxtaposed rotating commutators as a means of selecting in an irregular, aperiodic manner, the successive alphabets (for encipherment or decipherment) from among a plurality of cipher alphabets is the contribution of Frank B. Rowlett.

3. The associated principle of controlling the stopping positions of a single substitution cipher wheel by a set of juxtaposed control cipher wheels is the contribution of William F. Friedman. Note: Thus, for example, in Friedman and Graham U. S. Patent No. 2,028,772 the cipher key transmitter and its associated mechanism would be replaced by a set of control cipher wheels, the 26 final contacts of which would be connected to pins which would stop the substitution commutator in the enciphering (or deciphering) position.

4. The idea as to the possibility of directly applying the foregoing principles to the stopping of a rotating printing wheel at cipher positions, the latter being superimposed upon the stopping position determined by the key depressed on the keyboard, is the equal and joint contribution of both William F. Friedman and Frank B. Rowlett. In this case, in order to prevent cumulative errors it is necessary to return the printing wheel to an initial position after each operation. The cipher stopping position of the printing wheel is determined after it has been stopped by the depression of a key of the keyboard.

*William F. Friedman*  
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William F. Friedman.

Witnesses:

*Louise N. Nelson*  
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*Ph. A. D.*  
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*Frank B. Rowlett*  
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Frank B. Rowlett.