

Patent related

Enclosed can be shown
if re-typed. To show
enclosed charges.

Stamped paper enclosed also if
re-typing desired.

~~CONFIDENTIAL~~
B. PENDING APPLICATIONSDate Pat Memo was original
is 25 April 1936

<u>SERIAL NO.</u>	<u>DATE FILED</u>	<u>INVENTOR(S)</u>	<u>TITLE</u>	<u>NATURE</u>
582,096	25 July 1933	William F. Friedman	Cryptographic System	The application involved in Converter M-134 and M-134A, the predecessor to Converter M-134C (SIGABA). Very important because it is the basic invention of electric control of a set of cryptographic rotors in cascade.
107,244	23 Oct 1936	William F. Friedman	Improvement in Cryptographs	Replacing the key tape control by a system of differential cam wheels with variable lug patterns.
70,412 ✓	23 Mar 1936	William F. Friedman and Frank B. Rowlett	Cryptographs	A set of cryptographic rotors in cascade, the angular placements of which are controlled by another set of rotors. Basic invention in Converter M-134C (SIGABA).
* 443,320	16 May 1942	- - - - See last entry p. 2 for details		
478,193	6 Mar 1943	William F. Friedman	System for Enciphering Facsimile	The basic invention in facsimile or telephoto encipherment by polarity reversal.
478,868	12 Mar 1943	William F. Friedman and J. O. Mauborgne	System for Enciphering Facsimile	Variation of preceding application.

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<u>SERIAL NO.</u>	<u>DATE FILED</u>	<u>INVENTOR(S)</u>	<u>TITLE</u>	<u>NATURE</u>
551,172 -	24 Aug 1944	William F. Friedman	Authenticating Device	Mechanism for electrically authenticating messages
549,086 ✓	11 Aug 1944	William F. Friedman	Electrical System	Basis of Converter M-325 (SIGFOY)
* 443,320 ✓	16 May 1942	William F. Friedman and Frank B. Rowlett	Cryptographic System	The basic invention involved in Converter M-228 (SIGCUM).

*- out of chronological order

see p. 1

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REF ID: ~~CONFIDENTIAL~~
A. ISSUED PATENTS

<u>PAT. NO.</u>	<u>DATE ISSUED</u>	<u>INVENTOR(S)</u>	<u>TITLE</u>	<u>NATURE</u>
1.608,590	30 Nov 1926	William F. Friedman	Alphabetical Chart	Means for composing 2-letter differential code symbols for various purposes.
1,516,180	18 Nov 1944 ^{1 2}	William F. Friedman and Louis M. Evans	Secret Signaling System-Employing Apparatus for Automatically Enciphering and Deciphering Messages	Introducing a third and intermittent, cipher-key, tape transmitter in a teletype encipherment system.
1,522,775	13 Jan 1925	William F. Friedman	Secret Signaling-Apparatus for Automatically Enciphering and Deciphering Messages	Introducing a connection-changing switchboard in a teletype encipherment system.
1,530,660	1925	William F. Friedman	Printing Telegraph System	Replacing multiplex principle with carrier frequencies.
1,694,874	1925	William F. Friedman	Printing Telegraph System	Replacing short-stop principle with modulated carrier.
1,857,374	10 May 1932	William F. Friedman and Louis M. Evans	Cryptograph Enciphering and Deciphering Device	A cryptographic system employing Baudot encipherment principles, with a mechanism to be superimposed on the keyboard of a standard typewriter for printing the text of messages.
2,028,772	28 Jan 1936	William F. Friedman and George A. Graham	Cryptographic System	This was the first model Converter M-134 (T-1) with a single rotor and key tape control of the angular displacements of the rotor.

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<u>PAT. NO.</u>	<u>DATE ISSUED</u>	<u>INVENTOR(S)</u>	<u>TITLE</u>	<u>NATURE</u>
2,028,772 continued				Very important because it is the first invention of <u>electric control of aperiodic stepping of rotors</u>
2,080,416	18 May 1937	William F. Friedman	Message Authenticating System	For authenticating messages of various sorts. The apparatus includes a key-board, a perforated-card control, and an adding machine mechanism. This is the first instance of an IBM card being used for cryptographic keying purposes.
2,139,676	13 Dec 1938	William F. Friedman	Cryptographic Apparatus	A single rotor using mechanical keying control, consisting of a set of cam wheels and a translator mechanism for combining the effects of the cam wheels.
2,395,863	5 Mar 1946	William F. Friedman	Cryptographic Device	Basic patent on Strip Cipher Device, Type M-138.
2,166,137	18 July 1939	William F. Friedman and Frank B. Rowlett	Electrical Switching Mechanism	Mechanism for causing an IBM electric sorter to "unsort" or randomize perforated cards.

B. Pending Applications

682,096	Delete "in cascade"
107,244	OK
70,412	Suggest "6 set of cryptographic rotors, the angular placements of which are controlled by other rotors, Basis invention in Converter of 134C (SIGABA)"
443,720	OK
478,183	OK
478,868	OK
551,172	OK
549,086	OK

A. Issued Patents

1,608,590	} OK
1,516,180	
1,522,725	
1,530,660	
1,694,824	
1,857,374	
2,028,722	Change last sentence to read: Very important because it is the first invention of electric control of rotors.

2,080,416	} OK
2,139,674	
2,395,863	
2,166,137	