

IN THE
UNITED STATES PATENT OFFICE

Application of
WILLIAM S. FRIEDMAN
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Serial Number
70,412

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23 March 1936

For
CRYPTOGRAPHIC

*Filed
Sept 11, 1945*

Division 53
Room 6897

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AMENDMENT

To: The Honorable Commissioner of Patents
Washington, D. C.

Sir:

This is in response to Patent Office action of 26 September 1942.

IN THE SPECIFICATION:

Page 10, Lines 6 through 10 - Cancel "Contacts.....course, these"
and insert - The - .

Page 10, Line 11 - - - Cancel "could" and insert - may - .

Please add the following claims:

40. The combination of a plurality of commutators and means for
varying the rotatory relationship therebetween to vary electrical paths
therethrough, said means including a further plurality of commutators,
means for supplying electrical signals thereto, and means for utilizing
the several outputs thereof to vary in predetermined fashions the rota-
tory relationships of the commutators of said first mentioned plurality.

41. The method of controlling a variable electrical path through a cryptographic maze or the like which includes introducing a signal to a further cryptographic maze or the like, and utilizing the output of said latter maze to control said first mentioned path.

42. The method of controlling variable electrical paths through a cryptographic maze or the like which includes introducing successive signals to a further cryptographic maze or the like and utilizing the outputs of said latter maze to control said paths.

43. The method of enciphering which includes translating a character into an electrical impulse on a variable electrical path, translating the output of said path into a character, introducing a signal to a further variable electrical path and using its output to control the variation of said first mentioned electrical path.

44. The method of enciphering which includes translating a character into an electrical impulse on one of a plurality of variable electrical paths, translating the output of said one path into a character, introducing a signal to one of a further plurality of variable electrical paths and utilizing the output of said latter mentioned one path to control the variations in said first mentioned plurality of paths.

REMARKS:

The change on page 10 of the specification has been made to correct an ambiguity between description and drawings. As amended, no specific stepping mechanism is disclosed, but this is unimportant since any of several known expedients may be employed.

With respect to the Examiner's objection to claim 21, the expression "moving the same according to a law" has reference to the cryptographic law of the machine which depends upon the wiring of the several rotors, their relative positions upon shaft 20, and their starting alignment. The expression is well known in the art.

The rejection of claims 34 and 35 as drawn to the use of the apparatus is believed to be unsound. Reference is made to the case of Eastern Paper Bag Machine Company, et al. vs. Standard Paper Bag Machine Company, et al., 30 F. 63, one of a long line of cases based upon Cochrane vs. Deener, 1877 C. D. 242, cited by the Examiner. The latter mentioned case apparently decided only that a process is not anticipated by a patent for a mechanism with which the process can be practiced. In the course of its opinion, the Court stated (page 247), "That patent is not at all for the process which Cochrane claims. If valid, and if, in using his process, Cochrane is obliged to use any device secured to Cogswell and McKieran, it does not detract in the slightest degree from his own process patent." And, in Smith Engineering Works vs. Norberg Manufacturing Company, 449 C. G. 763, while holding the two process claims in suit invalid upon three different grounds, the Circuit Court of Appeals pointed out (page 764) that, "Whether the claims in suit are thus limited to the functions of the machine or whether they are mechanical transactions which may be performed by hand or by several different mechanisms is the question we must determine, for on its determination patentability turns."

The purport of these cases is clearly that functionality is not a question of law but is to be determined from the facts of each case, and that where a process is susceptible of practice (as is Applicants') by

machines other than that disclosed or entirely without mechanical assistance, other than pencil and paper, functionality is not a proper ground of rejection.

New claims 41 through 44, which are not limited to specific apparatus, cover broadly and narrowly the step of permuting or mixing signals used for the control of a cryptographic process, while claim 40 is directed to an apparatus suitable for practicing the same. The permuting of the keying signals adds immeasurably to the security of the resulting cipher.

Prosecution of this case is to continue under the three year rule.

Respectfully submitted,

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Their Attorney