

IN THE UNITED STATES PATENT OFFICE
BEFORE THE BOARD OF APPEALS

RE: Application for Patent of	*	
WILLIAM F. FRIEDMAN	*	
Serial Number	*	Appeal Number 29557
107,244	*	
Filed	*	BRIEF FOR THE APPELLANT
23 October 1936	*	<i>Filed - 26 Nov. 51</i>
For	*	
CRYPTOGRAPHS	*	
* * * * *		

The Honorable Commissioner of Patents
Washington 25, D. C.

Sir:

This is an appeal from the decision, 27 September 1948, of the Principal Examiner, finally rejecting Claims 15, 16, and 17. The claims as to which the appeal is pressed are set forth herewith:

- 15. A method of enciphering messages including rotating a plurality of character-displacing commutators at different angular rates from predetermined original positions responsive to movements of a similar plurality of camming members, and giving indications according to the cascade of the individual character-displacements of the commutators.
- 16. The method of controlling the angular displacements of a plurality of rotatable commutators or the like by means of a similar plurality of rotatable camming members which includes the step of simultaneously rotating said camming members step by step through individually different angular distances.

17. The method of controlling the angular displacements of a plurality of rotatable commutators in response to a plurality of camming members which includes the step of combining the effects of at least two camming members and utilizing such combined effects to control such displacements.

REMARKS

The invention of the appealed claims is in the cryptographic art and more particularly relates to a well-known type of apparatus (of which many patented examples exist) in which encipherment is accomplished by means of mutually rotatable wheels in series. Commonly, although not necessarily, each wheel is provided with twenty-six input contacts, on one face, and twenty-six output contacts, on the opposite face, and the wheel-to-wheel relationship is such that twenty-six complete electrical paths can be made through the series. The input contacts and the output contacts of each wheel are randomly connected. The rotation of any one wheel ordinarily modifies all circuits in some respect, and so means are provided for stepping the wheels.

Metric stepping, wherein one wheel makes one complete revolution before a following wheel steps once, is well-known, but, for some purposes, aperiodic stepping is desirable, and it is this feature to which the appealed claims are directed.

All of the claims here in issue were identically finally rejected "as fully met by the patent to Damm, No. 1,540,107." According to the Examiner, the rotatable commutators (of the claims) are equivalent to wheels N_1 through N_4 (of the patent), and the camming members (of the claims) are equivalent to the structure shown in Figures 2 and 3 of the patent.

Considering Claim 15, Applicant's method involves rotating a plurality of character-displacing commutators at different angular rates from predetermined original positions, but the wheels N_1 through N_4 of DAMM are not character-displacing wheels at all, but are so-called key disks. They would, moreover, not be usable as character-displacing wheels without extensive reorganization; they are of different sizes and would, thus, cooperate with each other only with great difficulty since they could not contain equal numbers of equispaced contacts. This requirement is not explicit in the claim, but is inherent in the wheel. In the DAMM device, the members C_1 and C_2 are the character-displacing members, but these cannot be applied to the appealed claims because they differ in number from the key wheels (camming members) N_1 through N_4 . Moreover, the key wheels of DAMM cannot, of course, give "indications according to the cascade of the individual character displacements" thereof, as required by Claim 15.

With respect to Claim 16, the patent is even less applicable than as noted above. If the key wheels of DAMM be considered the equivalents of the rotatable commutators of the application, then there are, obviously, no similar plurality of camming members which can turn (step by step or otherwise) through individually different angular distances, since the Patentee shows one integral camming member in the form of a drum (see Figures 2 and 3). Furthermore, if the key wheels N_1 through N_4 be considered camming members, they not only differ in number from the wheels they control but in addition do not always step simultaneously as the claim requires.

So far as concerns Claim 17, the reference fails to show any steps comparable to those of "combining the effects of at least two camming members and utilizing such combined effects to control" displacements of rotatable commutators. Each peripheral row of knobs of drum V_5 is related to a single one of the disks N_1 through N_4 (page 2, lines 87-107).

As a matter of fact, while the members of Figures 2 and 3 of the reference may be said to be related to the wheels N_1 through N_4 , they are believed to be improperly termed "camming members," since actually they neither produce nor control any action in the disks N_1 through N_4 . The Patentee refers to the member V_5 as a "secondary key" (page 2, lines 37-38). The drum is driven from one of the disks N_1 through N_4 rather than vice versa (page 2, lines 80-87). The action of the secondary key and the several knobs thereof is to disable a contact nominally under the control of one of the disks N_1 through N_4 (page 2, lines 100-107).

For the reasons above stated, it is submitted that the Examiner erred in finally rejecting Claims 15, 16, and 17, and that his decision should be reversed.

Respectfully,

WILLIAM F. FRIEDMAN, Appellant

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His Attorney