

AMERICAN PATENTS FOR "ENIGMA" CIPHERING MACHINES.

- 1) No. 1,535,252 Protects the principle of the ciphering system which is the basis of all our machines.
- 2) No. 1,556,964 Change from five figure numeral code to understandable ten letter groups. Applicable to incandescent lamp and writing ciphering machines.
- 3) No. 1,584,660 Protects the principle of expressing only by letters in the cipher otherwise open text consisting of small letters, numerals, punctuation marks and spacing. This is very important for ciphering machines because, for reasons of security of the cipher, it is not possible to see from the cipher text what class of signs the clear text consists of, and also from the standpoint of simplicity of manipulation as numerals and signs on account of being ciphered do not need to be changed into letters. This is also cheaper for cipher telegrams, the clear text of which consists of several kinds of signs. It is mainly applicable to writing ciphering machines. It is also very important for ciphering machines of other systems, and therefore extremely valuable to us.
- 4) No. 1,657,411 Protects the principle of subdividing the cipher text into groups of five or fifty or a hundred letters. It is convenient for counting the signs written down and for finding out possible errors in mutilated messages. It is chiefly important for writing machines. It is absolutely necessary for other types of ciphering machines and therefore especially valuable to us.
- 5) No. 1,520,089 Electrical typewriter with type wheel. Of course this type of construction is also applicable to writing ciphering machines. We do not however use this as the writing speed is too low. It is however valuable to us as a so-called blocking patent against other inventions (Construction patent)
- 6) Ser.No.18,271 Refers to: irregular drive of the cipher cylinders. It is very valuable for all ciphering machines on account of the thereby increased security of the cipher (Principle and construction patent)
- 7) Ser. No.110,810 Refers to: changeability of the cipher cylinders, which has important advantages from the technical cipher standpoint in that it permits the use of cylinders with other connections in any kind of arrangement for cipher work. It is applicable to all cipher machines, but is mainly used for security of the cipher in our incandescent lamp machines (Principle and construction patent)

- 8) Ser. No. 110,809 Refers to Reversing cylinder. It is consequently very important for the simpler machines, for example, our incandescent lamp machines, as this effects the saving of an expensive and space taking 26 part change-over for ciphering and deciphering (Construction patent).

Moreover five more patents have been applied for in Germany, which protect partly the principle and partly the constructional details of important parts of the incandescent lamp and writing ciphering machines, and which will be applied for in America within the year of priority. These consist of two applications for our latest incandescent lamp ciphering machines with counting mechanism which not only considerably increase the security of the cipher in these machines but also make the handling of the machine very simple. The first application is for protection of a principle and the second for protection of constructional detail. Three further applications refer to writing ciphering machines, one of them protecting the principle of technical gearing arrangements and two of them protecting constructional improvements for easier reading and quicker setting of the key and a change over arrangement which considerably cheapens the machine on account of its suitable construction. The two last applications can also be used for incandescent lamp machines.

From the patents granted and those applied for it can be seen that we have in America the most extensive patent protection of the principles of mechanical ciphering machines. As these patent applications are still quite recent, the patent situation in America is extremely favorable for us for many years to come.