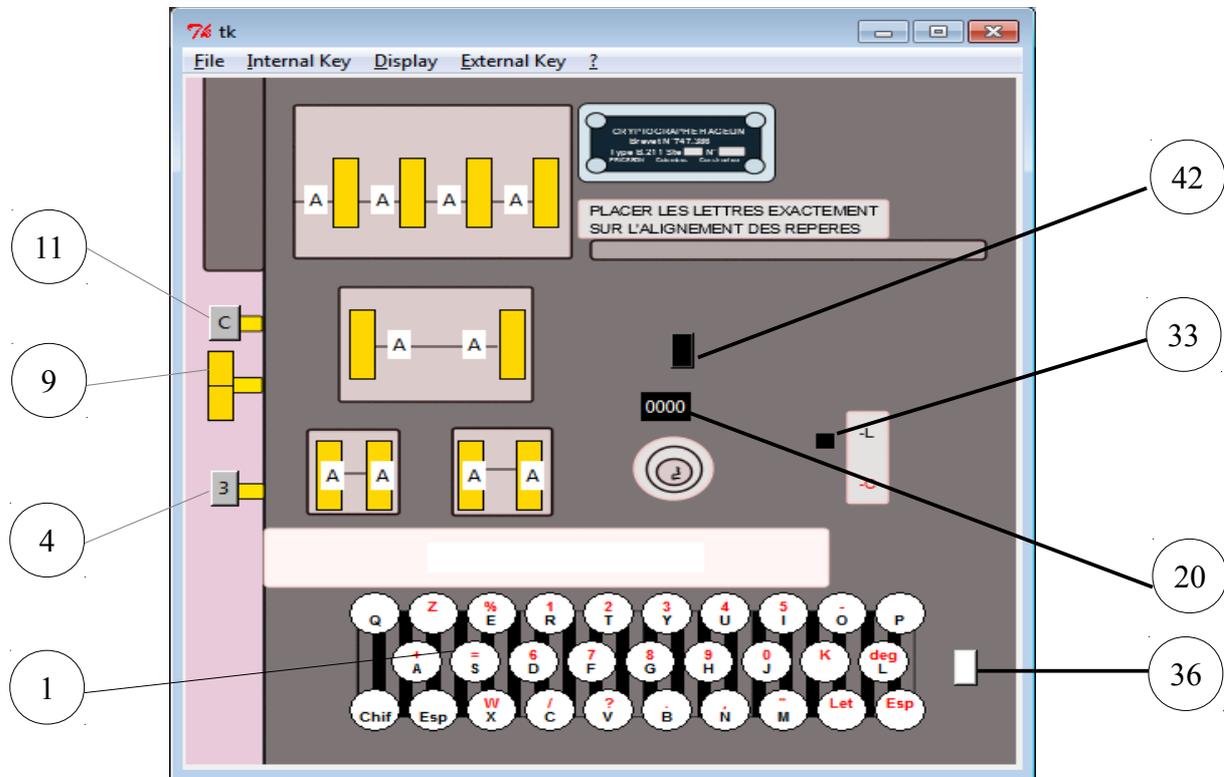*Excerpts of the genuine*

« User manual of the CIPHER MACHINE Hagelin TYPE-B 211 (29 March 1943) » [The original document was in French]
Picture n°2.

III – USER MANUAL

A – GETTING ON STATE TO CIPHER.

1. … Switch on the machine using the switch (36).

3. Set the lever (4) on position « 1 ».

4. Turn the knob (9) pushing the end of the locking lever (42) towards the rear of the device until the last digit of the counter (20) indicates a 5 or a 0.
Note: on the simulator, simply click on the locking lever (42) for resetting the counter.

5. Set the external key (see special secret instructions). Take care to place the key letters opposite to the red marks.

6. Turn the knob (11) to the position C.

7. Turn the knob (4) to the « 3 » position. By this operation, the key letters of the wheels of the superencipherment device approach the edge of the windows that their correspondes.
Note: on the simulator the wheels doesn't move (but they turn!).

8. Ensure that the lever (33) is in the position L.

B – CIPHERING.

Key on the keyboard the text to be ciphered by gradually pressing the keys completly. Take as much as possible a steady cadence. Comply, with regard to the red and black signs and spaces to what has been said about the use of the printing machine. Plaintext is fully encrypted, keep keying 'spaces' or any letters so as to bring the counter number ended with a 0 or a 5. In this way the last group of the ciphertext will be completed in group of five letters.

C - GETTING ON STATE TO DECIPHER.

Same instructions to cipher. Delete paragraph 4 and replace paragraph 6 with the text « Put the handle (11) to the position D ».

D – DECIPHERING.

Keying on the keyboard the letters of the ciphertext regardless of color and without using any of the buttons "Chif (numbers)", "Let (letters)" and "Esp (space)". The text is automatically decrypted and figures, punctuations and spaces of the plaintext are rendered.

The counter indicates the progress of decryption.

…..

Here is the beginning of the manual. We started with the encryption and decryption operations because they are the parts of the manual that are the most useful.

CIPHER MACHINE HAGELIN TYPE B-211

Hagelin cipher machine B-211 is used to encrypt any plain text by replacing the letters and numbers of the plaintext by letters that make the ciphertext.

The handling is simple. The device is connected to an electrical plug. By keying the plain text on the keyboard, the ciphertext is obtained on a paper tape. Conversely, entering the ciphertext gives the plaintext.

Hagelin cipher machine B-211 offers a way to cipher of an absolute security. Thanks to its mechanical-electrical devices, the possible number of combinations is indeed an order of astronomical magnitude.

I - SUMMARY DESCRIPTION AND OPERATION

Hagelin cipher machine type B-211 consists of three parts:

- **An electric typewriter.**

- **A machine to cipher.**

- **A super encipher device.**

These three units are united into one with size: 430 x 340 x 140 mm and the weight about 16 kg.

A – THE ELECTRIC TYPEWRITER

1. PRINCIPLE:

In front of a paper tape which advances automatically, a type wheel (35) is driven in a rotational movement by an electric motor (21) or in its absence by a crank.

When lowering a key on the keyboard (1) two battery circuits (19) are closed and they manage one or two electromagnets (32). These electromagnets release one of 25 bars (31) placed around the shaft of the type wheel. The liberated strip protruding front of the type wheel and blocks it. The paper strip is then projected on the character of the type wheel corresponding to the depressed key.

…
3. KEYBOARD:

It is similar to an ordinary typewriter. It has 29 keys with black signs and red signs.

4. ELECTROMAGNETS:
…
To facilitate typing some signs were divided on 2 different keys the corresponding black and red signs.

The "Esp (space)" key (black) operates the same electros as the key "K" (red).
The "Esp (space)" key (red) activates the same electros as the key "Q" (black).
The key "Let (letter)" (red) activates the same electros as the "P" key (black).
The key "Chif (figure)" (black) operates the same electros as the "Z" key (red).

This is why there are 29 keys while the keyboard allows only 25 combinations.

…
7. SHIFT :

This is the device that allows printing eihter the black sign written in black, or the red one when we lower a button.

It consists of a lever (33) whose end appears in a slot of the lid of the machine. This lever can take two different positions: either besides the letter "L" (and then the machine prints the signs of the black series) either besides the letter "C" (and then the machine prints the signs of the red series).

8. ADVICES

When printing text includes black and red signs, the procedure is as follows:

We make sure:
1) That the shift is in the "L" position.
2) That the cipher machine is isolated from the printing machine. This isolation is achieved by placing the handle (11) to the "O" position.

We switch on the engine (button (33)) and successively lower the keys corresponding to the black signs you want to print.

When you want to print one or more red signs, first lowering the "Chif (numbers)" key. When one wants to return to a black sign beforehand is lowered down the "Let (letter)s" key. When we want to get spacing, use the "Esp (space)" black key, if the last hit is a black; or the "Let (space)" red key, if the last hit sign is a red sign.

EXAMPLES :

Printing the text "reçu 472 francs " is produced by striking the keys in succession: R, E, C, U, space-black (Esp), numbers (Chif), 4, 7, 2, letters (Let), black-space (Let), F, R, A , N, C, S,

or : R, E, C, U, figures (Chif), space-red (Esp), 4, 7, 2, space-red (Esp), letters (Let) , F, R, A, N, C, S.

The word "gazeux" is printed hitting successively G, A, figures (Chif), Z, letters (Let), E, U, X.