NYCTOGRAPH

MACHINE

USER'S GUIDE

RONI BANDINI

WARRANTY

One Year Limited Warranty

Roni Bandini warrants its products to be free from defective material and workmanship for a period of one (1) year from the original date of purchase at retail. Roni Bandini agrees to repair or replace, at its sole discretion, a defective machine if returned to the factory within the warranty period and with proof of purchase.

This warranty does not extend to any machines which have been subject to misuse, neglect, accident, incorrect wiring or to use in violation of operating instructions furnished by us, not extend to any units altered or repaired for warranty defect by anyone other tan Roni Bandini.

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INTRODUCTION

Charles Lutwidge Dodgson, better known by his pen name, Lewis Carroll was an English writer of children's fiction, notably Alice's Adventures in Wonderland but it was also a mathematician and inventor.
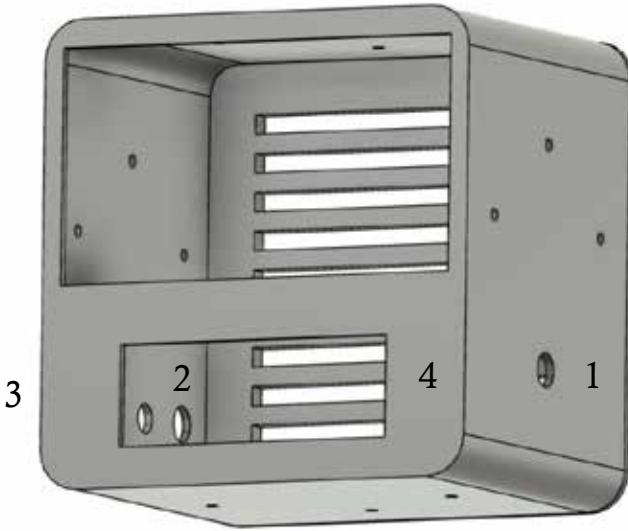
What did he invent? An early version of what today is known as Scrabble, a rule for finding the day of the week for any date, a means for justifying right margins on a typewriter, a steering device for a velociam and Nyctography, a writing tablet that allowed note-taking in the dark, thus eliminating the need to get out of bed and strike a light when one woke with an idea. The device consisted of a gridded card with sixteen squares and a system of symbols representing a custom alphabet.

"Why not invent a square alphabet, using only dots at the corners, and lines along the

sides?' I soon found that, to make the writing easy to read, it was necessary to know where each square began. This I secured by the rule that every square-letter should contain a large black dot in the N.W. corner. … [I] succeeded in getting 23 of [the square letters] to have a distinct resemblance to the letters they were to represent."

The Nyctograph Machine, even being a fully operational device, can be considered mainly as an artistic object and some sort of tribute to Lewis Carroll.

PARTS

1: Operation Knob

2: 5v Power Source plugin

3: On switch

4: LCD screen

INSTALLATION

• Plug in a 5 volts, 4 amps or higher power source.

• Turn on the side switch.

• Open thermal printer

• Place a 2.25" 57.5mm wide thermal paper.

USING THE MACHINE

- Turn the knob wheel to rotate roman alphabet letters.

- Press the knob to select the first letter.

- Repeat the procedure to select following letters up to 16.

- If your word or phrase has less than 16 letters just press the knob showing asterisk multiple times to reach the 16th position.

- At that point the machine will print the word or phrase using Nyctograph alphabet.

TECHNICAL SPECIFICATIONS

```
static char letters[27] = " ABCDEFGHIJKLMNOPQRSTUV
char phrase[16]="";

void message(String myString)
{
        lcd.clear();
        lcd.print("Nyctograph");
        lcd.setCursor(0, 1);
        lcd.print(myString);
  }

 void setup() {

   pinMode (outputA,INPUT);
   pinMode (outputB,INPUT);
   pinMode(buttonA,INPUT_PULLUP);

   pinMode (ledA,OUTPUT);
```
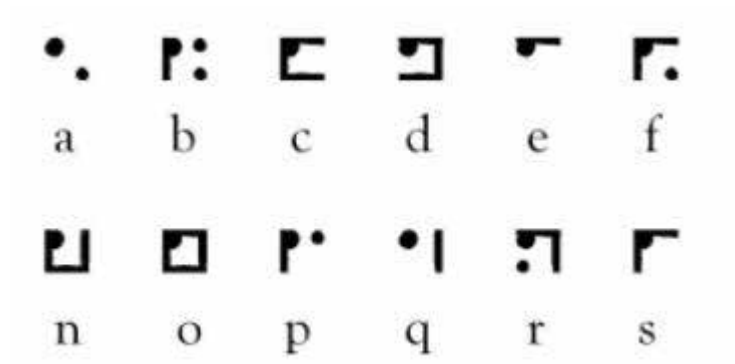
- Source code: C++

- Size: 110mm x 110mm x 90mm

- Printing Speed: 50-80mm/s

- Resolution: 8 dots/mm, 384 dots/line

- Effective Printing Width: 48mm

- Nyctograph letters: 24

- Word or phrase size: 16

- Operating Temp: 5°C ~ 50°C

ELECTRONICS

- Arduino Mega 2560

- Adafruit Thermal Printer 58mm

- LCD Screen 16x2

- Rotary Encoder with push button

- Switch

- Led

- DC Female Plug

- Custom case

WIRING

Connect LCD 16 x2 SDA pin to Arduino Mega A4, SCL pin to Arduino Mega A5, LCD VCC to Arduino Mega 5v and LCD GND to Arduino Mega Ground.

Connect Printer Yellow cable to Arduino Mega D12, Printer Green cable to Arduino Mega D11 pin, Printer black cable to Arduino Mega Ground pin. Connect Printer VCC to 5v Power and GND to 5v Ground.

Connect Rotary Encoder SW pin to Arduino Mega D5, Rotary CLK to Arduino Mega D6, Rotary D to Arduino Mega D7

Connect Led + to Arduino Mega D8 and Led - to Arduino Mega GND

REPLACING LETTERS

If you want to replace letters with a bigger size or with your own Nyctograph design, you will have to export each letter to BMP 1 bit. Then you will have to convert the BMP to a byte array. You can use LCD Assistant for this purpose. The free application can be downloaded at http://en.radzio.dxp. pl/bitmap_converter/ Remember to select Horizontal option.

Place byte arrays into letters.h file using this format:

```
static const uint8_t
PROGMEM a [] = {...}
```

DEBUG MODE

Nyctograph machine includes a debug mode to print all letters at start. Just edit the code and change

```
int alphaPrint=0;
```

to

```
int alphaPrint=1;
```

OTHER MACHINES

You could also be interested in the following machines:

- Rayuelomatic: a machine to read Hoopscotch novel by Julio Cortazar

- Borgy: Jorge Luis Borges animatronic over a Furby toy.

- The Klausner Machine: a machine to "listen" plants, based on Roald Dahl story.

CONTACT

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