

SPECIFICATION

Hand metal magnetic encoder

- 5 This invention relates to a magnetic encoder adapted to be manually held and manipulated. The encoder may be used to encode a pattern of magnetic data onto a suitable magnetizable surface, for example onto a magnetic cards or card keys.
- 10 Accordingly the present invention provides a hand held encoder for encoding magnetic card keys and the like comprising: a housing adapted to be manually held and manipulated, a probe mounted on said housing and having an outer tip adapted to be
- 15 applied against a surface to be magnetized, an electrical circuit in said housing including: a supply of direct current, windings around said probe and a capacitor, and a switch on said housing for discharging said capacitor through said windings to provide
- 20 a magnetic field for magnetizing a spot at said surface when said tip is applied thereto, said housing being formed with a portion thereof providing a pistol grip, said switch being secured to said grip and adapted to be actuated by a finger of the user.
- 25 The encoder may be used in combination with a template adapted to hold a card upon which a magnetic record is to be induced, the template defining a pattern of apertures through which the tip of the probe can be guided to induce a magnetic record on
- 30 the card.

An embodiment of the invention will now be described, by way of example, with reference to the accompanying drawings in which:—

- 35 Figure 1 is a side elevation of the preferred form of the encoder with the front half of the housing removed to show internal structure.

Figure 2 is a side elevation of the encoder in use to apply a magnetic spot to a card key.

- 40 2. Figure 3 is a top plan view of the encoder of Figure 2.

Figure 4 is a schematic wiring diagram of the encoder's electrical circuit.

- The encoder comprises a molded housing, preferably of plastic, which is centrally split before final assembly to provide one half, indicated at 1A in Figure 1, and the opposite similar half indicated at 1B in Figures 2 and 3. The housing includes a bottom wall 2 and side walls 3 which combine to form a pistol grip wherein the complete thickness of the housing
- 50 is less than one-half the width of the housing as is shown in Figure 3. The sidewalls 3 and top 4 of the housing terminate in an enlarged opening 5 in which is received a support 6 which is recessed within the opening 5 for fixedly securing the support to the
- 55 housing.

- Fixedly secured within a central aperture 7 in support 6 is a coil 8, which may consist of about 150 turns of No. 24 magnet wire, which provides a strong flux within a centrally positioned probe 9 which is
- 60 adapted to be applied by the user to a card to be encoded, as seen in Figure 2. Only the major elements of the circuitry are shown in Figure 1 since the entire circuitry is shown schematically in Figure 4. First referring to Figure 4 the encoder is connected
- 65 by means of lines 10, 11 to a power supply 12 which

includes a charging resistance 13.

- A trigger switch generally designated 15 is employed to charge and discharge a capacitor 16. In parallel with capacitor 16 is a lamp 17 which indicates the condition of capacitor 16.

- 70 When the trigger switch 15 is moved to its 'up' position, referring to Figure 4, capacitor 16 discharges through coil 8 to create the desired magnetic field in probe 9. To obtain uniformity in the strength of the magnetic field it is preferable to discharge the capacitor 16 through a silicon-controlled rectifier 20 in which the gate 21 is connected to the circuit through a resistance 22 to provide the desired voltage drop. Also in the circuit of coil 8 is a polarity
- 75 switch 25 by which the user may reverse the polarity of the flux impressed on the card to be encoded.

- Referring again to Figure 1 it is seen that the trigger switch 15 is in the form of a push button which is convenient to the forefingers of the user when the
- 80 desired pulse is to be generated in the probe.

- The polarity switch 25 is also in close proximity to the forefingers of the user so that it is a simple matter to switch from one polarity to another as the coding of the card requires.

- 90 Although the size of the capacitor required in a circuit of the subject type is fairly large, such capacitor is readily received in the space available in the housing 1. The lamp 17 may be supported on a support 30 which in turn is secured to the top wall 4
- 95 of the housing 1 so that the operator may readily see the condition of the lamp 17.

- Not only does the lamp provide a means for determining that the capacitor 16 is charged but it also indicates when the unit is connected to power and when it is disconnected. Furthermore, the lamp 17 bleeds off the charged capacitor through the filament so that the encoder is not stored with a charged capacitor. If desired, an on/off switch (not shown) may be incorporated in the circuit.

- 100 In use and referring to Figure 2 it will be seen that the encoder 1 may be employed with a template 33 which is adapted to hold a card 32 in the desired position while the probe 9 is applied against said card to impress the magnetic spots thereon. Template 33 may be provided with a nonmagnetic guide plate 34 which is formed with apertures arranged in a predetermined pattern to receive the probe 9
- 110 therethrough, thus insuring that the magnetic spots are applied at the correct points.

- 115 The present invention also contemplates the use of a dry cell battery as the source of direct current, the battery may be substituted for the power supply 12 and lines 10, 11. As seen in Figure 1 such battery may be positioned in the upper portion of housing 1 as indicated at 40 by dot-dash lines.

CLAIMS

1. A hand held encoder for encoding magnetic card keys and the like comprising: a housing adapted to be manually held and manipulated, a
- 125 probe mounted on said housing and having an outer tip adapted to be applied against a surface to be magnetized, an electrical circuit in said housing including: a supply of direct current, windings around said probe and a capacitor, and a switch on
- 130 said housing for discharging said capacitor through



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55 housing.
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105 The present invention also contemplates the use of a dry cell battery as the source of direct current, the battery may be substituted for the power supply 12 and lines 10, 11. As seen in Figure 1 such battery may be positioned in the upper portion of housing 1 as indicated at 40 by dot-dash lines.

CLAIMS

1. A hand held encoder for encoding magnetic card keys and the like comprising: a housing adapted to be manually held and manipulated, a probe mounted on said housing and having an outer tip adapted to be applied against a surface to be magnetized, an electrical circuit in said housing including: a supply of direct current, windings around said probe and a capacitor, and a switch on said housing for discharging said capacitor through

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said windings to provide a magnetic field for magnetizing a spot at said surface when said tip is applied thereto, said housing being formed with a portion thereof providing a pistol grip, said switch being secured to said grip and adapted to be actuated by a finger of the user.

2. A hand held encoder for encoding magnetic card keys and the like comprising: a housing adapted to be manually held and manipulated, a probe mounted on said housing and having an outer tip adapted to be applied against a surface to be magnetized, an electrical circuit in said housing and including: a supply of direct current, windings around said probe, and a capacitor, a switch on said housing for discharging said capacitor through said windings to provide a magnetic field for magnetizing a spot at said surface when said tip is applied thereto, a template for holding the card to be encoded, said template including openings defining points at which magnetic spots are to be applied, said outer tip of said probe being adapted to pass through said openings for engagement with said card to create points of magnetic flux whereby said card may be selectively magnetized at particular locations on the card in accordance with said template openings.

3. A hand held encoder for encoding magnetic card keys and the like comprising: a housing adapted to be manually held and manipulated, a probe mounted on said housing and having an outer tip adapted to be applied against a surface to be magnetized, an electrical circuit in said housing including: a supply of direct current, windings around said probe and a capacitor, a polarity switch by which the direction of the magnetic flux in the winding is reversed, and a switch on said housing for discharging said capacitor through said windings to provide a magnetic field for magnetizing a spot at said surface when said tip is applied thereto, said housing being formed with a portion thereof providing a pistol grip, said switch being secured to said grip and adapted to be actuated by a finger of the user.

4. An encoder substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.

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