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(54) **Labelling machines.**

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Description

The invention relates to hand-held labelling machines. One kind of such machines comprises a housing having a manually engageable handle, the housing having means for holding a label supply roll composed of a composite web having labels releasably adhered to a backing strip, means for printing on a label at a printing position, means for peeling a printed label from the backing strip, label applying means disposed adjacent the peeling means, means for advancing the backing strip to peel a printed label from the backing strip at the peeling means and advance the printed label into label applying relationship with the label applying means and to advance another label to the printing position, the housing further having means for holding a source of electrical energy.

In known machines of this kind, e.g. as described in DE-B-2253 565 and US-A-3 923 582, which have been used in supermarkets and other stores to apply to each article on display for sale an adhesive label indicating the price of the article, the labels have been fed from a roll of the unprinted labels to a printing head at which the printing operation is effected mechanically by means of inked printing elements in the form of adjustable flexible bands or type wheels. Such machines have disadvantages associated with the inking and adjustment of the printing elements. Such machines also are limited as to what they can print.

Other hand-held machines are known for printing bar codes. These employ polygonal wheels or like members of which the flat sides are pressed against the label either after inking or through an inked ribbon. An example of such a machine is that described in US-A-4 018 157 (Sato). Such machines suffer from similar disadvantages and from limitations as to what they can print.

The invention is accordingly concerned with the provision of a labelling machine which is an improvement over these known machines at least in that it does not involve the use of inked printing bands or type wheels and can be designed for great versatility as to what it can print.

The invention accordingly provides a labelling machine of the kind described, characterized by means including a keyboard mounted on the housing for entering selected data to be printed, the printing means including a thermographic printing head with a matrix or array of electrically selectable dot heating elements powered by the source of electrical energy and suitable for printing bar codes on a thermographic label at the printing position, means coupled to the keyboard for receiving and electrically processing data representative of the selected data entered by the keyboard, means electrically coupling the data receiving and processing means and the thermo graphic printing head, and means for causing the data receiving and processing means to select and energise dot heating elements in the matrix or array of dot heating elements in the thermographic printing head to print the selected data on the label in a form including a bar code when required.

US-A-4,004,672 (Hirano) discloses the use of a printing head of the "dot matrix" kind in connection with a portable calculator, handy typewriter or the like. The Hirano US-specification, however, contains no suggestion that the printing head disclosed would be useful in the field of, or for the specific applications of the present invention.

According to a preferred feature of the invention the labelling machine can comprise means for providing a signal representative of the position of a label, and the receiving and processing means being responsive to the output of the signalling means to ensure registration of each label with the printing head prior to printing.

According to another preferred feature of the invention the receiving and processing means includes means for storing selected data, and wherein the means for causing the data receiving and processing means to operate the printing head includes switch means operated by the user and electrically coupled to the data receiving and processing means to print on a label a representation of the selected data stored in the storing means each time the switch is operated.

According to another preferred feature of the invention the advancing means includes a stepping motor. Preferably the advancing means includes means for sensing the position of the composite web, and means responsive to the sensing means for controlling the data receiving and processing means to terminate operation of the stepping motor when a label is in label applying relationship with respect to the label applying means.

According to a further advantageous feature of the invention, the composite web has means adapted to be sensed by the sensing means. Optically or mechanically detectable spaced markings may be placed on the composite web for this purpose.

According to another preferred feature of the invention, the data receiving and processing means includes a microprocessor. Said microprocessor preferably includes a read only memory and/or a random access memory.

According to another preferred feature of the invention the labelling machine can be provided with display means coupled to the data receiving and processing means for displaying data entered by the keyboard.

Part of the information to be printed can be invariable or prearranged, in not being directly under the user's control, the selected part being selected by the user to relate to the particular articles being labelled. Thus the label can be printed with the name of the store as well as the article price. In addition to a capability for printing each label with a bar code for mechanical reading, the machine may be arranged to print, preferably on more than one line, alpha-numeric or other symbols.

Advantages of the invention are to be seen in

the ease and convenience of use of the machine and of the labelling material, and in the enlarged versatility offered for printing immediately selectable, and also preset data as required. Also the precise registration of the data printed with the labels can be obtained, as described, and the machine can be made to store and display data related to use of the machine.

The invention is further explained below, by way of illustration only, with reference to the accompanying drawing, in which:

Figure 1 is a schematic sectional side view of an illustrative labelling machine embodying the invention;

Figure 2 shows the circuit arrangements of the labelling machine in schematic block diagram form; and

Figure 3 is a schematic perspective view of a label strip for use in the machine in accordance with the invention.

Machine Structure

The labelling machine illustrated comprises a housing 1 shaped with an opening to provide a handle portion 2 at its upper right hand side as shown in figure 1. Immediately beneath the handle portion 2, the housing interior provides space for reception of an electric energy source in the form of one or more batteries 3, with door means (not shown) permitting replacement thereof. The energy source may instead be a rechargeable power pack in which event terminals are provided for recharging as by connection to the mains supply. Centrally of the housing 1, there is located a magazine 4 for labels to be printed and dispensed by the machine. In the illustrated machine, the labels are provided in the form of a rolled strip 5 of paper or other thermographic material which is led by a feed mechanism generally forwardly from the magazine to a thermographic printing head 6, and a dispensing position.

Door means (not shown) in the housing 1 permits ready replacement of the rolled label strip 5 when exhausted and convenient threading of the free end of the strip through the feed mechanism.

As appears from figure 1, the paper strip 5 is led upwardly from the periphery of the roll by guide means 7 and is then turned through 180° to travel past an optical sensing means 8 the nature and function of which will be described below. The paper strip is then engaged between a drive roller 9 and an idler roller 10 of the feed mechanism and emerges from the nip of these rollers to advance forwardly to between the printing head 6 and a print support 11

Although shown as a fixed guide over which the paper strip slides, the print support 11 may include a support roller. In either event, the print support is shaped to bring the strip in engagement with heatable elements of the thermographic print head.

After printing at the printing head 6, the strip continues forwardly out of the housing 1 to beneath ad ispensing roller 12, by which it can be wiped on to an article to be labelled. The paper strip is preferably self-adhesive, that is, it carries an adhesive layer on the surface opposite that which is printed, and this adhesive layer is initially covered by a backing strip 14 which must be separated from the label strip 5 itself before this can be applied to an article. For this purpose, the print support 11 is provided with a relatively sharp edge around which the backing strip 14 is turned rearwardly back into the machine to be received between the drive roller 9 and a second idler roller 15. From these rollers, the backing strip 14 is fed rearwardly and downwardly outwardly of the machine through an aperture in the housing 1.

The drive roller 9 is driven by electric motor 16, which can be a stepping motor, accommodated at the front of the housing above the dispensing roller 12. The machine operates under control of electronic circuitry, shown schematically in figure 2, located at the top of the housing 1 beneath a keyboard 19 provided with push-buttons 18 by which data can be entered into the circuitry. The machine is actuated by means of a push button operated main control switch 20 positioned rearwardly of the keyboard so that it can be pressed by the thumb of an operator holding the machine with his fingers around the handle portion 2.

Instead of the feeding mechanism shown, the nmachine of the invention can incorporate a solenoid operated escapement drive for the label strip.

Control Arrangements

The illustrated labelling machine operates under the control of the electronic circuit arrangement shown in schematic block diagram form in figure 2. Central to the circuit is a micro-processor 21 which is preferably a single silicon chip including within its monolithic structure a read only memory (ROM), a random access memory (RAM), instruction registers, address registers, a central control logic section, and data input and output means. The microprocessor 21 receives inputs from the keyboard 19, the push-button switch 20, and from the sensor 8. It provides outputs to a step motor drive control unit 22 which effects operation of the step motor 16, and to the printing head 6. The circuit includes a clock 24 arranged to provide a pulse train for coordinating the operations carried out within the microprocessor.

Printing Head

The printing head 6 is a solid state thermographic printing head, but a hot needle or a thick or thin film thermographic printing head could be employed. The printing head 6 comprises a plate mounting a matrix or array of protruberant printing elements, together with connections to line driver circuit elements 25, 26 and dot driver element 27, connected to receive signals from the microprocessor 21. The microprocessor 21 is arranged to supply to the driver elements 25, 26

and 27 signals such that certain heating element of the printing head, selected in dependence on a programme established by operation of the keyboard 19, receive currents sufficient to heat these elements to a temperature at which colour is developed or changed on the label strip 5 over the small area in contact with the heating elements. Typically, the printing head may carry twelve groups each comprising seven rows each of five heating elements, so that a twelve character line can be printed at the time. After a line has been printed, the stepping motor 16 of course advances the label strip by such an amount that the area of the paper on which the next line of characters is to be printed is in engagement with the printing element matrix. The printing head can comprise any appropriate number of heating elements, the numbers of connections to the head 6 shown in figure 2 being merely illustrative. The printing head can be arranged to print characters composed of a dot matrix in any desired combination and to print any number of characters sequentially or simultaneously in a line or column as desired.

The Label Strip

As shown in figure 3, the label strip 5 comprises a length of paper or plastics material 28 having coated on one surface a suitable heat sensitive coating 29 which changes or develops colour in response to the application of the heat. The strip material 28 is coated on the opposite side with a layer 30 of adhesive material to provide a self adhesive or pressure sensitive coating. Laminated on to the adhesive layer 30 is a paper or plastics backing strip 31 coated with an adhesive resistant surface in engagement with the adhesive layer, so that the backing strip can be readily peeled away. The laminated label and backing strips are separated off into label portions all of equal length, by lines of weakness or complete or partial transverse cuts 32 made in the label strip only. During the operation by which these cuts are formed, an ink strip or other mark preferably in exact coincidence with each cut 32 is printed either on the label or on the backing strip. The ink strip is such that it can be read by the optical sensor 8 in the machine. Instead of an ink strip to be sensed optically, a magnetic strip or other mark can be provided for detection by a magnetic sensor in the machine. Either arrangement permits the sensor to provide a signal to the microprocessor so that the feed of the label strip can be adjusted to correct for any departure from registration of the printed information with the longitudinal edges of the label portions.

Operation

The illustrated labelling machine is primarly intended for the labelling of articles in stores and supermarkets, and the information to appear on labels dispensed by the machine comprises at a minimum the price of the article. Before printing and applying a batch of labels, the user operates the keyboard 19 to set up in the microprocessor a programme for printing the desired price information on each label of the label strip 5. The price selected is stored within the microprocessor 21, and each time the operator actuates the main push-button switch 20 a printing and dispensing cycle is performed, by which a label printed with the selected price appears below the dispensing roller, 12.

At the beginning of the cycle, the leading edge of a label portion of the strip 5 will be just beyond a narrow transverse portion of the label engaged between the heating elements of the printing head 6 and the print support 11. In response to a print command signal from the push-button switch 20, the microprocessor 21 supplies to the driver elements 25, 26 and 27 signals for energising selected heating elements in accordance with the stored printing programme determined by the user. Printing of the desired price information on the label is thus effected. The microprocessor then supplies a signal to the motor control unit 22 to energize the motor 16 to advance the strip 5 until such time as the next ink strip on the strip is detected by the sensor 8. The resultant signal to the microprocessor 21 causes this to stop energisation of the motor so that advance of the strip ceases. The positions of the sensor 8, the printing head 6, the support 11 and the roller 12 along the path of the strip 5 are such that the printed label is now beneath the roller 12 with the backing strip 31 peeled away over about 95% of the length of the label and the cut 32 separating the printed label from the next following label of the strip is at the position of the leading edge of the now printed label before the cycle began. The printed label can be applied to an article and the push button switch 20 pressed again to start another cycle.

As will be further described below, the labelling machine of the invention can be provided with many advantageous facilities beyond the capacity to print a single line of price information.

Additional Information

Thus the labelling machine so far described can readily be adapted to print information additional to the readily adjustable price information put into the machine by operation of the keyboard 19. The price information will of course normally contain one or more fixed elements, in the form of symbols identifying at least the major unit of the currency in which the price is expressed. Such additional information can comprise further variable or selected information preset by the user by means of the keyboard 19 or by other means less readily accessible than the keyboard, for example the machine can be provided with an input means 23 not normally available to the operator which can be reached or rendered operative only by opening the housing 1 or by use of a key. Alternatively or in addition fixed information to be printed may be determined on manufacture of the machine.

The fixed or invariable additional information can comprise for example the name of the vendor

or a sales slogan. The additional variable or preset information can include for example unit price data, information as to the nature of the article (for example, its weight or volume or the number of items packed within it), and calendar information (for example, the date of packaging, the date by which the article should be sold or used, or the date by which a warranty on the article expires).

In addition, the label can be printed with alpha numeric data identifying the article in some suitable code, for stock control purposes. The label may also be printed with data relating to the article coded in a bar code, for reading electrically or optically, as at a check-out counter, the information being fed into a automatic cash register and/or into a computer for stock control purposes.

Multiline Printing

It will be evident that the additional information will normally require to be printed on more than one line, and the illustrated, machine can be readily modified for multiline printing, on labels of sufficient length, by arranging for the multiprocessor 21 to advance the strip 5 through a series of steps each corresponding to a printed line, the length of only the last advance being covered by a signal from the sensor 8.

Colour Printing

The labelling machine of the invention and the label strip it uses can also be readily modified to obtain a label printed in two colours. In the modification, the single dye coating 29 of the surface of the label strip 28 is replaced by three layers of coating material. The heating elements of the printing head 6 are arranged to be heated selectively either to a higher or to a lower temperature. If a heating element receives current such that it is heated only to the lower temperature, the heat transferred to the label strip is sufficient to develop the colour of the outermost layer only. If the current supplied is sufficient to raise the temperature to the higher level, not only is the colour in the outer layer developed, but so is the colour in the innermost layer. The intermediate layer is also responsive to this level of temperature to permit flow of the activated dye from innermost to the outermost layer, so that a second colour different from that of the outermost layer on its own appears at the coated surface of the strip.

The microprocessor 21 can be readily adapted to effect printing of a label with a plurality of lines of information in different colours, or even to print in different colours on a single line.

Summation and Display

The circuit illustrated in figure 2 can if required include additional data register means 34 as shown, for totalling the number of labels printed with a particular item of selected data. The additional data register 34 may have the capacity for accumulating a plurality of totals each representing the number of times for which the machine has been used to print labels bearing respective different items of information.

Information thus stored can be displayed at command on the machine by means of a digital display 35 provided on the keyboard for stock control and/or accounting purposes, and/or conveyed from the machine to a computer interface by means of a suitable plug and socket connection 36, for the stored data to be used in a computerised stock control and accounting system. The digital display on the machine can be constituted by liquid crystal or light emitting diodes, or a gas discharge display.

Although the label material is advantageously made self adhesive, in this way so that it can be attached by the adhesive to the article to be price labelled, it is also within the invention to provide labelling material which can be subsequently attached to an article by means of a thread or string or metal or plastic staple.

Claims

1. A hand-held labelling machine, comprising:

a housing (1) having a manually engageable handle (2), the housing (1) having means for holding a label supply roll (5) composed of a composite web having labels releasably adhered to a backing strip (14), means (6) for printing on a label at a printing position, means for peeling a printed label from the backing strip (14), label applying means (12) disposed adjacent the peeling means, means (9, 10, 15) for advancing the backing strip to peel a printed label from the backing strip (14) at the peeling means and advance the printed label into label applying relationship with the label applying means and to advance another label to the printing position, the housing further having means for holding a source of electrical energy (3), characterised by means including a keyboard (19) mounted on the housing for entering selected data to be printed, the printing means including a thermographic printing head (6) with a matrix or array of electrically selectable dot heating elements powered by the source of electrical energy (3) and suitable for printing bar codes on a thermographic label at the printing position, means (21) coupled to the keyboard (19) for receiving and electrically processing data representative of the selected data entered by the keyboard (19), means (25, 26, 27) electrically coupling the data receiving and processing means and the thermographic printing head, and means (20) for causing the data receiving and processing means to select and energise dot heating elements in the matrix or array of dot heating elements in the thermographic printing head (6) to print the selected data on the label in a form including a bar code when required.

2. A hand-held labelling machine as defined in claim 1, and further comprising means (8) for providing a signal representative of the position of a label, and the receiving and processing means (21) being responsive to the output of the signaling means (8) to ensure registration of each label with the printing head prior to printing.

3. A hand-held labelling machine as defined in

either claim 1 or claim 2, wherein the receiving and processing means (21) includes means for storing selected data, and wherein the means for causing the data receiving and processing means (21) to operate the printing head includes switch means (20) operated by the user and electrically coupled to the data receiving and processing means to print on a label a representation of the selected data stored in the storing means each time the switch (20) is operated.

4. A hand-held labelling machine as defined in any one of Claims 1, 2 or 3, wherein the advancing means includes a stepping motor (16).

5. A hand-held labelling machine as defined in Claim 4 wherein the advancing means includes means (8) for sensing the position of the composite web, and means (21) responsive to the sensing means for controlling the data receiving and processing means to terminate operation of the stepping motor when a label is in label applying relationship with respect to the label applying means.

6. A hand-held labelling machine as defined in claim 5 wherein the composite web has means adapted to be sensed by the sensing means (8).

7. A hand-held labelling machine as defined in any one of claims 1 through 6, wherein the data receiving and processing means includes a microprocessor (21).

8. A hand-held labelling machine as defined in claim 7 wherein the microprocessor (21) includes a read only memory.

9. A hand-held labelling machine as defined in either of claim 7 or claim 8 wherein the microprocessor (21) includes a random access memory.

10. A hand-held labelling machine as defined in any one of claims 1 through 9 including line driver circuit elements (25, 26) and dot driver circuit elements (27) coupling the data receiving and processing means (21) and the dot heating elements.

11. A hand-held labelling machine as defined in either of claims 1 or 2, wherein the data receiving and processing means includes a microprocessor, wherein the means for causing the data receiving the processing means (21) to operate the thermographic printing head also causes operation of the advancing means and includes switch means (20) and means (8,22) coupled to the microprocessor for terminating operation of the advancing means when a printed label has been advanced into label applying relationship relative to the label applying means.

12. A hand-held labelling machine as defined in any one of the preceding claims, including display means (35) coupled to the data receiving and processing means (21) for displaying data entered by the keyboard (19).

Patentansprüche

1. Handetikettierer bestehend aus einem Gehäuse (1) mit einem von Hand erfaßbaren Handgriff (2), wobei das Gehäuse (1) eine Vorrichtung aufweist zur Aufnahme einer Etikettenvorratsrolle (5) aus einem zusammengesetzten Band mit an einem Tragstreifen (14) lösbar anhaftenden Etiketten, eine Vorrichtung (6) zum Bedrucken eines Etiketts in einer Druckstellung, eine Vorrichtung zum Ablösen eines bedruckten Etiketts vom Tragstreifen (14), eine neben der Ablösevorrichtung angeordnete Etikettenaufbringvorrichtung (12), eine Vorrichtung (9, 10, 15) zum Vorschieben des Tragstreifens zwecks Ablösens eines bedruckten Etiketts vom Tragstreifen (14) in der Ablösevorrichtung und zum Vorschieben des bedruckten Etiketts in die Etikettenaufbringstellung in bezug auf die Etikettenaufbringvorrichtung sowie zum Vorschieben eines weiteren Etiketts in die Druckstellung, wobei das Gehäuse weiterhin eine Vorrichtung zur Aufnahme einer Stromquelle (3) umfaßt, gekennzeichnet durch eine auf dem Gehäuse angeordnete Vorrichtung mit einer Tastatur (19) zum Eingeben der zu druckenden, ausgewählten Daten, wobei die Druckvorrichtung einen thermographischen Druckkopf (6) mit einer Matrix oder Anordnung elektrisch auswählbarer Punktheizelemente, die von der Stromquelle (3) gespeist werden und geeignet sind, ein thermographisches Etikett in der Druckstellung mit Strichmarkierungen zu bedrucken, eine mit der Tastatur (19) gekoppelte Vorrichtung (21) zur Aufnahme und zur elektrischen Verarbeitung der Daten, die für die durch die Tastatur (19) eingespeisten ausgewählten Daten charakteristisch sind, eine Vorrichtung (25, 26, 27) zum elektrischen Koppeln der Datenaufnahme- und -verarbeitungsvorrichtung und des thermographischen Druckkopfs, und eine Vorrichtung (20) zum Betätigen der Datenaufnahme- und -verarbeitungsvorrichtung im Sinne des Auswählens und des Speisens von Punktheizelementen in der Matrix oder Anordnung von Punkterwärmungselementen im thermographischen Druckkopf (6), um das Etikett mit den ausgewählten Daten in einer, ggf. eine Strichmarkierung enthaltenden Form zu bedrucken.

2. Handetikettierer nach Anspruch 1, dadurch gekennzeichnet, daß weiterhin eine Vorrichtung (8) zum Erzeugen eines für die Stellung eines Etiketts charakteristischen Signals vorgesehen ist, und daß die Datenaufnahme- und -verarbeitungsvorrichtung (21) auf das Ausgangssignal der Signalvorrichtung (8) anspricht, um die Lagegenauigkeit jedes einzelnen Etiketts in bezug auf den Druckkopf vor dem Bedrucken zu gewährleisten.

3. Handetikettierer nach einem der Ansprüche 1 oder 2, dadurch gekennzeichnet, daß die Datenaufnahme- und -verarbeitungsvorrichtung (21) eine Vorrichtung zum Speichern ausgewählter Daten umfaßt, und daß die Vorrichtung zum Betätigen der Datenaufnahme- und -verarbeitungsvorrichtung (21) im Sinne der Steuerung des Druckkopfes eine Schaltvorrichtung (20) umfaßt, die vom Benutzer betätigbar und mit der Datenaufnahme- und -verarbeitungsvorrichtung gekoppelt ist, um bei jeder Betätigung der Schaltvorrichtung (20) ein Etikett mit einer Darstellung der in der Speichervorrichtung gespeicherten ausgewählten Daten zu bedrucken.

4. Handetikettierer nach einem der Ansprüche 1,

2 oder 3, dadurch gekennzeichnet, daß die Vorschubvorrichtung einen Schrittmotor (16) umfaßt.

5. Handetikettierer nach Anspruch 4, dadurch gekennzeichnet, daß die Vorschubvorrichtung eine Vorrichtung (8) zum Feststellen der Lage des zusammengesetzten Bandes aufweist, und eine auf die Abtastvorrichtung ansprechende Vorrichtung (21) zum Steuern der Datenaufnahme- und -verarbeitungsvorrichtung im Sinne der Beendigung des Schrittmotorbetriebs, wenn sich ein Etikett in bezug auf die Etikettenaufbringvorrichtung in der Etikettenaufbringstellung befindet.

6. Handetikettierer nach Anspruch 5, dadurch gekennzeichnet, daß das zusammengesetzte Band Vorrichtungen umfaßt, die von der Abtastvorrichtung (8) abtastbar sind.

7. Handetikettierer nach einem der Ansprüche 1 bis 6, dadurch gekennzeichnet, daß die Datenaufnahme- und -verarbeitungsvorrichtung einen Mikroprozessor (21) umfaßt.

8. Handetikettierer nach Anspruch 7, dadurch gekennzeichnet, daß der Mikroprozessor (21) einen Nurlesespeicher enthält.

9. Handetikettierer nach einem der Ansprüche 7 oder 8, dadurch gekennzeichnet, daß der Mikroprozessor (21) einen Speicher mit wahlfreiem Zugriff enthält.

10. Handetikettierer nach einem der Ansprüche 1 bis 9, gekennzeichnet durch Leitungstreiberstromkreiselemente (25, 26) und Punkttreiberstromkreiselemente (27) zum Koppeln der Datenaufnahme- und -verarbeitungsvorrichtung (21) und der Punktheizelemente.

11. Handetikettierer nach einem der Ansprüche 1 oder 2, dadurch gekennzeichnet, daß die Datenaufnahme- und -verarbeitungsvorrichtung einen Mikroprozessor umfaßt und daß die Vorrichtung zum Betätigen der Datenaufnahme- und -verarbeitungsvorrichtung (21) zwecks Steuerung des thermographischen Druckkopfes auch die Steuerung der Vorschubvorrichtung betätigt und eine Schaltvorrichtung (20) enthält, sowie Vorrichtungen (8, 22), die mit dem Mikroprozessor gekoppelt sind, um den Betrieb der Vorschubvorrichtung zu beenden, wenn ein bedrucktes Etikett in die Etikettenaufbringstellung in bezug auf die Etikettenaufbringvorrichtung vorgeschoben worden ist.

12. Handetikettierer nach einem der vorstehenden Ansprüche, gekennzeichnet durch eine Anzeigevorrichtung (35), die mit der Datenaufnahme- und -verarbeitungsvorrichtung (21) für das Anzeigen der über die Tastatur (19) eingegebenen Daten gekoppelt ist.

Revendications

1. Machine à étiqueter tenue à la main, comprenant:

- un boîtier (1) ayant une poignée (2) pouvant être saisie à la main, le boîtier (1) ayant des moyens servant à maintenir un rouleau d'alimentation d'étiquettes (5) composé d'une bande composite avec des étiquettes collées de façon amovible sur une bande arrière (14), des moyens (6) servant à imprimer sur une ètiquette se trouvant dans une position d'impression, des moyens servant à détacher une étiquette imprimée de la bande arrière (14), des moyens d'application d'étiquettes (12) adjacents aux moyens servant à détacher, des moyens (9, 10, 15) servant à faire avancer la bande arrière pour détacher une étiquette imprimée de la bande arrière (14) au niveau des moyens servant à détacher et pour faire avancer l'étiquette imprimée jusqu'à une position relative d'application de l'étiquette par rapport aux moyens d'application d'étiquettes, et pour faire avancer une autre étiquette jusque dans la position d'impression, le boîtier ayant en outre des moyens servant à maintenir une source d'énergie électrique (3), caractérisée en ce qu'elle comporte des moyens comprenant un clavier (19) monté sur le boîtier et servant à introduire les données sélectionnées à imprimer, les moyens imprimants comprenant une téte imprimante thermographique (6) ayant une matrice ou un arrangement d'éléments chauffants de points qui peuvent être sélectionnès électriquement, alimentés par la source d'énergie électrique (3) et convenant à l'impression de codes à barres sur une étiquette thermographique qui se trouve dans la position d'impression, des moyens (21) couplés au clavier (19) et servant à recevoir et à traiter électriquement des données représentatives des données sélectionnées introduites par le clavier (19), des moyens (25, 26, 27) qui accouplent électriquement les moyens de rèception et de traitement des données et la tête d'impression thermographique, et des moyens (20) servant à obliger les moyens de réception et de traitement des données à selectionner et à actionner des éléments chauffants de points de la matrice ou de l'arrangement d'éléments de chauffage de points de la tête d'impression thermographique (6) pour imprimer les données sélectionnées sur l'étiquette sous une forme comprenant un code à barres le cas échéant.

2. Machine à étiqueter tenue à la main selon la revendication 1, comprenant en outre des moyens (8) servant à fournir un signal représentatif de la position d'une étiquette, et les moyens de réception et de traitement (21) répondent au signal de sortie des moyens de signalisation (8) afin que chaque étiquette soit positionnée par rapport à la tête d'impression avant l'impression.

3. Machine à étiqueter tenue à la main suivant l'une des revendications 1 et 2, dans laquelle les moyens de réception et de traitement (21) comprennent des moyens destinés à mémoriser des données sélectionnées, et dans laquelle les moyens servant à obliger les moyens de réception et de traitement de données (21) à actionner la téte d'impression comportent des moyens de commutation (20) manoeuvrés par l'utilisateur et couplés électriquement aux moyens de réception et de traitement de données afin qu'une représentation des données sélectionnées conservées dans le dispositif de mémorisation soit imprimée sur une étiquette chaque fois que le commutateur (20) est actionné.

4. Machine à étiqueter tenue à la main selon l'une quelconque des revendications 1, 2 et 3, dans

laquelle les moyens servant à faire avancer comprennent un moteur pas à pas (16).

5. Machine à étiqueter tenue à la main selon la revendication 4, dans laquelle les moyens servant à faire avancer comprennent des moyens (8) servant à détecter la position de la bande composite, et des moyens (21) répondant aux moyens de détection et servant à commander les moyens de réception et de traitement des données pour interrompre le fonctionnement du moteur pas à pas lors- qu'une étiquette est en position relative d'application des étiquettes par rapport aux moyens d'application d'étiquettes.

6. Machine à étiqueter tenue à la main selon la revendication 5, dans laquelle la bande composite comporte des moyens servant à être détectés par les moyens de détection (8).

7. Machine à étiqueter tenue à la main selon l'une quelconque des revendications 1 à 6, dans laquelle les moyens de réception et de traitement des données comprennent un microprocesseur (21).

8. Machine à étiqueter tenue à la main selon la revendication 7, dans laquelle le microprocesseur (21) comprend une mémoire à lecture seule.

9. Machine à étiqueter tenue à la main selon l'une des revendications 7 et 8, dans laquelle le microprocesseur (21) comprend une mémoire à accès aléatoire.

10. Machine à étiqueter tenue à la main selon l'une quelconque des revendications 1 à 9, comprenant des éléments de circuit d'excitation de lignes (25, 26) et des éléments de circuit d'excitation de points (27) qui accouplent les moyens de réception et de traitement de données (21) aux éléments de chauffage de points.

11. Machine à étiqueter tenue à la main selon la revendication 1 ou 2, dans laquelle les moyens de réception et de traitement de données comprennent un microprocesseur, dans laquelle les moyens servant à obliger les moyens de réception et de traitement de données (21) à actionner la tête d'impression thermographique déterminent également la manoeuvre des moyens d'avance et comprennent des moyens interrupteurs (20) et des moyens (8, 22) couplés au microprocesseur pour provoquer l'interruption du fonctionnement des moyens d'avance lorsqu'une étiquette imprimée a été avancée jusqu'en position relative d'application de l'étiquette par rapport aux moyens d'application d'étiquette.

12. Machine à étiqueter tenue à la main suivant l'une quelconque des revendications précédentes, comprenant des moyens d'affichage (35) couplés aux moyens de réception et de traitement de données (21) et servant à afficher les données introduites par le clavier (19).

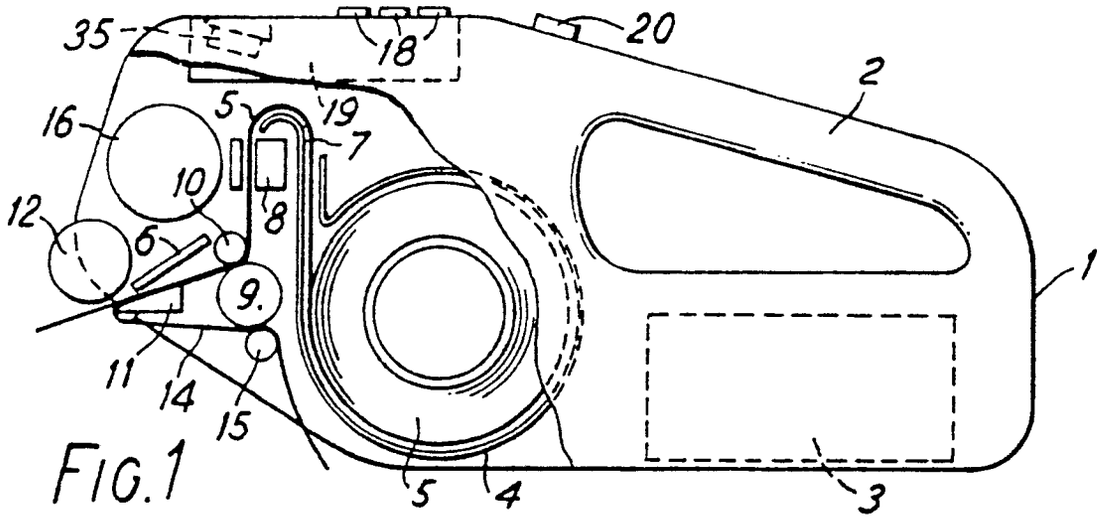

FIG.1

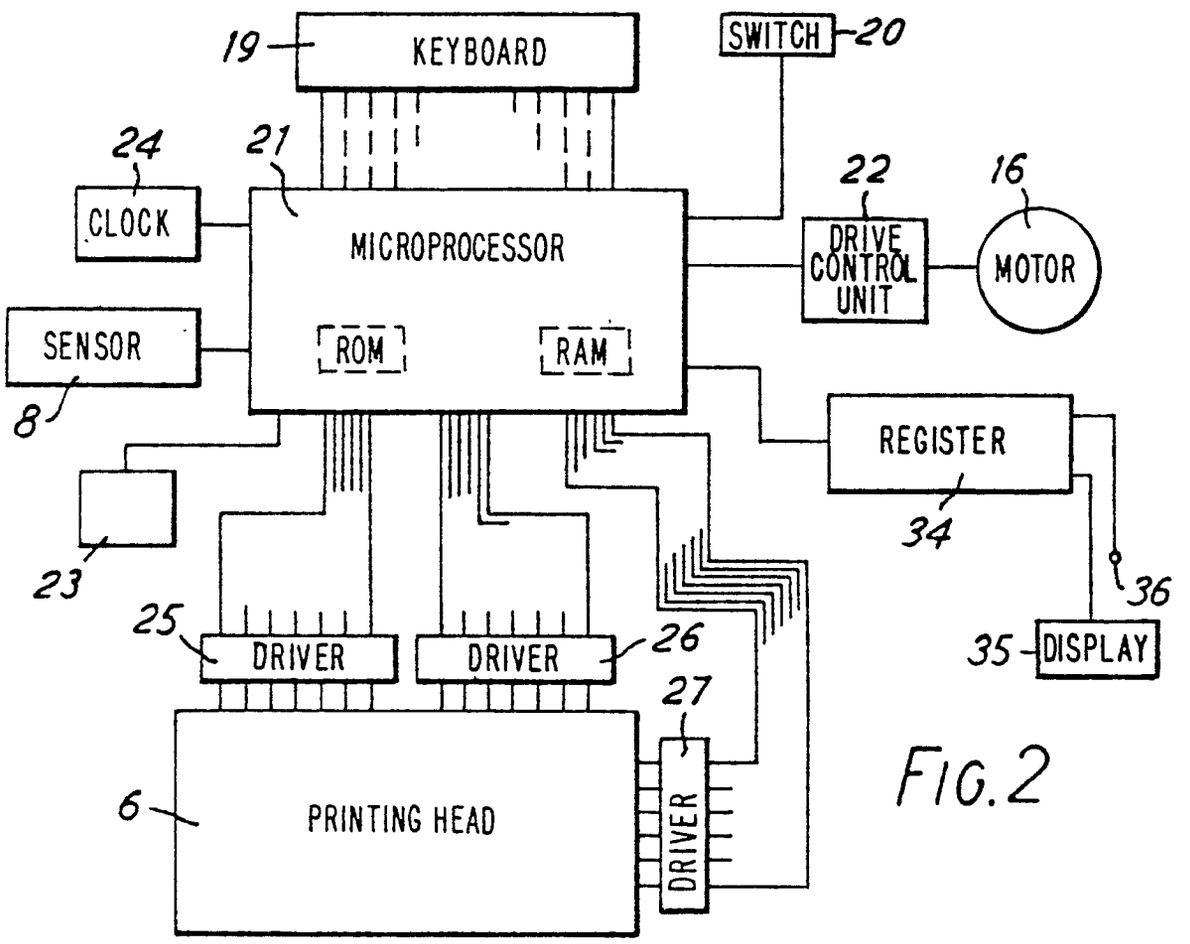

FIG.2

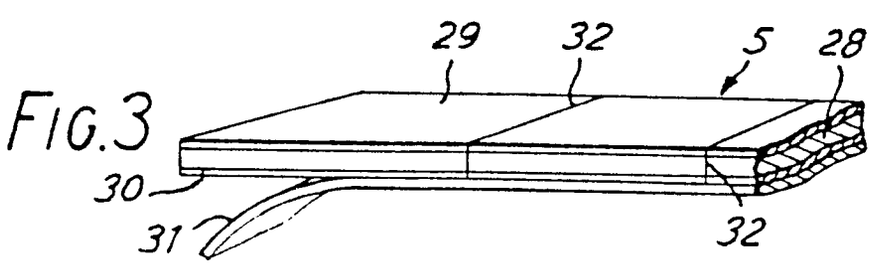

FIG.3