

Description**BACKGROUND OF THE INVENTION****Field of the Invention**

This invention relates to a thermal head support structure for thermal price tag printers, and particularly to a thermal head support structure for thermal price tag printers which is able to maintain an optimum printing pressure at the thermal head section in response to the state of contact between the label and thermal head during feeding, and which is not greatly affected by different widths of price tags.

Prior Art Statement

Figure 10 shows an example of a typical price tag strip 1. This price tag strip 1 consists of a strip of backing sheet 2 coated with a separating agent on its front surface and having detachably adhered continuously along its length a plurality of labels 3, each of which has pressure-sensitive adhesive coated on its rear surface, while positioning marks 4 are printed on the rear surface of the backing sheet 2. The labels 3 are printed with various data related to the product and are attached to the product as price tags. In addition, tags which do not use said pressure-sensitive adhesive are also used as price tags in the same way.

These price tags are normally formed in strips and loaded into various types of printing devices in rolled form, and are used by being returned to strip form from rolled form during printing. In a printing mechanism, or so-called thermal printer, in which these price tags are fed between a platen and thermal head and printed, there is a problem of the state of contact between the thermal head and price tag changing slightly depending on the state of feeding of these strip price tags, and the printing pressure between the platen and thermal head changing slightly with the feeding of price tags. Naturally, the same problem occurs even if the price tags are single sheets rather than strips.

In addition, there are various types of price tags with different widths, so maintaining optimum printing pressure when these price tags with different widths are loaded in a single thermal price tag printer becomes a technical problem.

There is also the problem of error during the assembly of these thermal head and platen sections causing the degree of parallelism of the thermal head and platen to be not set accurately, resulting in differences in printing pressure in the width direction.

US-A-4507866, corresponding to the precharacterizing part of the claim discloses a thermal price tag printer having a platen and a thermal head. The thermal head is supported by a support member which is attached to a shaft by means of two leaf springs. Said leaf springs allow said thermal head support to oscillate. For adjusting the printing pressure of the thermal head, a spring is provided between the head frame and the head, adjustable by means of adjust screws and nuts.

OBJECT AND SUMMARY OF THE INVENTION

This invention came about in light of the above, and its object is to provide a thermal head support mechanism for thermal price tag printers which is able to maintain continuously the optimum printing pressure when various types of price tags are loaded, fed, and printed, in response to the precision of assembly of the thermal head section or the width of price tags or their state of feeding.

Specifically, in a thermal price tag printer in which label strips, tags or other price tags are fed between a platen and thermal head and printing of the price tags is carried out, this invention is a thermal head support structure for thermal price tag printers characterized by having: a support member for the thermal head comprising a thermal head attachment member to which the thermal head is attached and a thermal head press member used to press the thermal head in the direction of the platen; a fixed spindle for rotation which rotatably supports the support member of the thermal head; and an oscillating support pivot member which supports the thermal head attachment member in such a way that it is able to oscillate in a plane parallel to the axial direction of the platen.

Said thermal price tag printer is characterized in that said oscillating support member is a pivot and said printing pressure switch mechanism is provided for switching a pressing member which presses said thermal head pressing member from a first position in which label strips of tags are to be printed to a second position in which tags being stiffer than said label strips are to be printed, said pressure member having in said second position a higher pressure than in said first position. Said printing pressure switch

mechanism comprises a drive shaft and said press member. Said drive shaft is linked to a switch operating lever through a rotating member for driving between said first and second positions. Said drive shaft is movably fitted in a fixed guide channel defining at its corresponding ends said first and second position. Said press member includes a drive-side spring holder section and a press member-side spring holder section movably disposed relative to the drive-side spring holder section and a pressing spring mounted between the drive-side spring holder section and said press-member side spring holder section. Said drive-side spring holder section is connected to said drive shaft and said press member-side spring holder section has a tip section being in elastic contact with said thermal head pressing member.

In the thermal head support structure for thermal price tag printers of this invention, a support member having a thermal head attachment member to which the thermal head is attached, is supported by an oscillating support pivot member in such a way that it is able to oscillate, so that when, for example, strip-shaped price tags are fed between the thermal head and platen, even if the state of contact between the price tag and thermal head is not in a specified setting, the thermal head attachment member can oscillate within a plane parallel to the platen axial direction, and thus the contact pressure in the width direction of the price tags can be appropriately adjusted so that the printing pressure between the thermal head and platen can be continuously maintained at an optimum value without any special adjustment work. Note that even if the portions of the platen and thermal head which are actually used for printing may be limited due to different widths of labels, the thermal head is able to oscillate with respect to the platen as described above, so an optimum printing pressure can be maintained.

The above and other features and objects of the present invention will become apparent with the following detailed description made with reference to the drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a partial side view of a portable thermal price tag printer as a preferred embodiment of this invention;

Figure 2 is a sectional drawing through line II-II of Figure 1;

Figure 3 is an enlarged sectional view through line II-II of Figure 1 showing the opening/closing mechanism 40 and the printing pressure switch mechanism 41 of the thermal head 34;

Figures 4 through 9 are sectional and plan views showing the state of attachment in other embodiments of the thermal head attachment member according to this invention;

Figure 10 is a perspective view of label strip 1.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

One preferred embodiment of this invention will be explained based on Figures 1 through 3.

Figure 1 is a partial cross sectional view of a portable thermal price tag printer 10 equipped with the thermal head support structure for thermal price tag printers of this invention, with the side cover removed.

This portable thermal price tag printer 10 has a case 11. On the vertical portion 11A of this case 11 is provided a feeder section 12 and take-up 13 for label strip 1. Between this feeder section 12 and take-up section 13 is formed a passage 14 for the label strip 1. Specifically, the label strip 1 leaving the feeder section 12 is wound through a printing section 15 and redirecting member section 16 to the take-up section 13.

In addition, the portable thermal price tag printer 10 has a data input section 17 comprising a numeric pad or function keys and a data display section 18 on the slanted front section of its case 11. In addition, a label cutting mechanism 19 is provided facing the redirecting member section 16. This portable thermal price tag printer 10 is also provided with a connector 20 for connecting to a power source, along with a transformer 21, power switch 22, connector 23 for connecting to a full keyboard, connector 24 for connecting to a pen scanner, RS-232C connector 25, and a socket 27 for installing a memory card 26 as an external memory medium.

The label strip 1 wound into a roll is installed onto a feeder spindle 28 of the feeder section 12, and its sideways motion is suppressed by a label presser 29. The label strip 1 is wound out and fed through the guide section 30 for label strip 1, guided by a label guide spindle 31 and a label width control member 32. The position of the label strip 1 is detected by a label position sensor 33 which detects its positioning marks 4, while it is fed between the thermal head 34 and platen 35 of the printing section 15.

After printing of information in this printing section 15 is done based on specified data, the redirecting member section 16 is reached. Note that depending on how the label strip 1 is loaded in this redirecting member section 16, the labels 3 may be peeled off of the backing sheet 2 and removed one at a time, or

after printing, they may be rolled as is with the backing sheet 2, one of these options can be selected. Specifically, in the case of peeling off the labels 3 one at a time, only the backing sheet 2 is redirected with a redirecting pin 36, and the labels peeled off are held by a label holder 37. In the case of feeding the labels 3 together with the backing sheet 2 without peeling off the labels, the label strip 1 can be guided so that it is fed above this label holder 37 and is wrapped around a take-up core 38 of the take-up section 13. Note that the label holder 37 can be released and is able to rotate (See the phantom lines of Figure 1), simplifying the insertion and feeding of the backing sheet 2. In addition, the redirecting member section 16 of the label strip 1 is provided with a label removal sensor 39. This sensor senses that a label 3 has been removed and transmits a detection signal which causes printing of the next label 3 to begin.

Furthermore, the printing section 15 is provided with an opening/closing mechanism 40 and a printing pressure switch mechanism 41. By opening or closing this opening/closing mechanism 40, the label strip 1 can be loaded into the printing section. By switching the printing pressure switch mechanism 41, the contact pressure between the thermal head 34 and platen 35 can be changed to switch the printing pressure depending on whether the price tags are in a label strip or are tags.

Note that the portable thermal price tag printer is provided with a feed drive motor 42 which is linked to the platen 35 by a timing belt 43. Also, the platen 35 and take-up core 38 are linked by a round belt 44 to transmit the rotary driving force of the motor 42.

Next the opening/closing mechanism 40 and the printing pressure switch mechanism 41 of the thermal head 34 will be explained in more detail based on Figures 1 through 3.

Specifically, Figure 2 is a sectional drawing through line II-II of Figure 1. Figure 3 is an enlarged sectional view showing the opening/closing mechanism 40 and the printing pressure switch mechanism 41 of the thermal head 34. As shown in Figure 1 and Figure 3, the printing pressure switch mechanism 41 has a drive shaft 50 and a press member 51. The drive shaft 50, linked to a switch operating lever 53 through a rotating member 52 for driving, can be set at position P1 or position P2 by the operation of switch operating lever 53. Specifically, this drive shaft 50 is movably fit into an arc-shaped guide channel 55 formed by a pair of support frames 54 (shown in Figure 2) and can move between position P1 at one end of the arc-shaped guide channel 55 and position P2 at the other end of the arc-shaped guide channel 55.

The press member 51, fit in such a way that it is able to rotate around the center of this drive shaft 50, comprises a drive-side spring holder section 56 and a press member-side spring holder section 57 and a pressing spring 58 mounted between this drive-side spring holder section 56 and press member-side spring holder section 57. Specifically, one end of the drive-side spring holder section 56 connects it to drive shaft 50, and an internal central post section 59 is free to move within a central sheath section 60 of the press member-side spring holder section 57. Due to the pressing force of the pressing spring 58 between the two members, a tip section for pressing 61 of the press member-side spring holder section 57 is in elastic contact with a support member 62 (thermal head press member 64) of the thermal head 34.

Note that a first distance D1 from the position where the tip section for pressing 61 contacts the support member 62 (thermal head press member 64) to the first position P1 of drive shaft 50 is set to be shorter than a second distance D2 to the second position P2.

The support member 62 has a thermal head attachment member 63 and a thermal head press member 64. Specifically, the thermal head attachment member 63 is a member to which the thermal head 34 is fixed on the side which faces the platen 35, while the member is rotatably supported by a fixed spindle for rotation 65 which spans the pair of support frames 54. More concretely, on the thermal head attachment member 63 is formed an oval-cross-sectioned free-fitting hole 66. In the center of this oval-cross-sectioned free-fitting hole 66, a protruding line 67 (See Figure 2) is formed, forming an oval-cross-sectioned through hole 68 in the central section in the length direction of the thermal head attachment member 63.

Also, this free-fitting hole 66 is formed such that it tapers from the outer ends towards the protruding line 67 positioned midway through the hole. Therefore, the thermal head attachment member 63 is able to oscillate in the lengthwise direction with respect to the platen 35 using the protruding line 67 as the fulcrum (See arrow A on Figure 2). In other words, the protruding line 67 is an oscillating support pivot member which supports the thermal head attachment member 63 in such a way that it is able to oscillate.

Therefore, the thermal head 34 is able to oscillate with good response to changes in contact pressure in the width direction of the label strip 1 which is loaded, fed and printed between the thermal head 34 and the platen 35, to make the printing pressure in the width direction as even as possible.

Note that by linking a linking section 69 of the thermal head attachment member 63 to the thermal head press member 64, the thermal head attachment member 63 and thermal head press member 64 are able to rotate as a unit around the fixed spindle for rotation 65 as its axis (See arrow B on Figure 1 and Figure 3). In addition, linked to the lower end of thermal head press member 64 is a link mechanism 70 and positioned on its tip is a contact roller 71 which, interlinked with the rotation of the thermal head press

member 64, rotates around a fixed axle 72 as its axis, and can be put into contact with or removed from the label strip 1.

Furthermore, on the back side of the thermal head press member 64, an opening/closing drive member 73 for opening and closing of the thermal head is provided such that it is able to be closed or opened. This opening/closing drive member 73 can be operated by means of an opening/closing operating lever 74 provided as a unit with the opening/closing drive member 73.

In a structure as described above, the opening and closing of the thermal head 34 will be explained below.

First, by rotationally operating the opening/closing operating lever 74 into the state shown by the two-dot broken line in Figure 1 and Figure 3, the opening/closing drive member 73 pushes on the back side of the thermal head press member 64, causing the support member 62 of the thermal head 34, or more specifically, the thermal head attachment member 63 and thermal head press member 64, to rotate against the pressing force of the pressing spring 58 in the counterclockwise direction as shown in the figure, thus separating the thermal head 34 from the platen 35, or in other words, releasing the printing section 15. At this time, the contact roller 71 retreats to a position behind the passage 14 for the label strip 1, and allows the label strip 1 to be fed or inserted.

Then after the loading of the label strip 1 is completed, by rotationally operating the opening/closing operating lever 74 into the state shown by the one-dot broken line in Figure 1 and Figure 3, the pressure of the opening/closing drive member 73 on the thermal head press member 64 is released, allowing the thermal head attachment member 63 and thermal head press member 64 to be pushed toward the platen 35 by the pressing force of the pressing spring 58 of the printing pressure switch mechanism 41, resulting in the platen 35 and thermal head 34 being placed in contact with each other at a specified pressure, or rather the printing pressure.

Now, in this state, if the switch operating lever 53 is moved to the state shown by the two-dot broken line in Figure 1 and Figure 3, the drive shaft 50 will move within the arc-shaped guide channel 55 to the first position P1, and the internal central post section 59 of the drive-side spring holder section 56 will enter deeper within the central sheath section 60 of the press member-side spring holder section 57. Because the distance from the first position P1 to the position where the tip section for pressing 61 contacts the support member 62 (thermal head press member 64) becomes the first distance D1, the pressing force of the pressing spring 58 increases, resulting in an increase in the pressing force of the tip section for pressing 61 on the thermal head press member 64. Therefore, the printing pressure between the thermal head 34 and platen 35 can be increased to provide an appropriate printing pressure for tags which are stiffer and have lesser adhesion to the thermal head than label strips.

On the other hand, if the switch operating lever 53 is moved to the state shown by the one-dot broken line in Figure 1 and Figure 3, drive shaft 50 will move to the second position P2, and the internal central post section 59 of the drive-side spring holder section 56 will retreat from within the central sheath section 60 of the press member-side spring holder section 57. Because the distance from the second position P2 to the position where the tip section for pressing 61 contacts the support member 62 (thermal head press member 64) becomes the second distance D2, the pressing force of the drive-side spring holder section 56 decreases, thus the above is reversed and the printing pressure can be made appropriate for label strips which require less printing pressure.

Furthermore, as described above, within a plane parallel to the axial direction of the platen 35, the thermal head attachment member 63 to which the thermal head 34 is attached appropriately equalizes the printing pressure depending on the state of feeding of the label strip.

Now, with this invention, with respect to where the standard for feeding of price tags, for example the label strip 1, is to be established, or at what position on the thermal head attachment member the oscillating support pivot member is to be placed depending on various cases in which different widths of the label strip 1 are loaded and used, any design may be employed. Next, these points will be explained in general with reference to Figure 4 through Figure 9.

Specifically, first as shown in Figure 4 and Figure 5, the oscillating support pivot member can be constructed of a normal shaft instead of the protruding line 67 as in the preferred embodiment described above. In other words, as shown in Figure 4, an oscillating support shaft 80 can be attached to the thermal head press member 64 with washers 81, and the thermal head attachment member 63 can be attached to this oscillating support shaft 80 such that it is able to oscillate.

Figure 5 is a top view of the state of this attachment. As in the above preferred embodiment, the oscillating support shaft 80 is provided in such a way that it is aligned with the center of the label strip 1 in the width direction. In other words, by guiding the label strip to the center of the platen 35 by means of a label guide mechanism 82 comprising the label width control member 32, etc., and providing the oscillating

support shaft 80 such that it is aligned with the center of the platen 35 and label strip 1, in the case of a label strip 1 being either wide or narrow (See phantom lines on Figure 5), the printing pressure applied to the label strip 1 will be appropriately equalized to the left and right in the width direction.

Next, Figure 6 illustrates the case of one fixed base surface 90 and another movable guide surface 91 used as a label guide mechanism. In this case, as shown in the drawing, regardless of whether the label strip is wide or narrow, one side of the label strip 1 will be in contact with and be guided by the fixed base surface 90 as a standard. The oscillating support shaft 80 is provided at a position extending in the width direction from this base surface 90. In addition, by means of an adjusting screw 92 which contacts the end surface (back surface) of the thermal head attachment member 63, the range of oscillation of the thermal head attachment member 63 can be limited, and thus the degree of parallelism of the platen 35 and thermal head 34 can be adjusted. (Note that while the cross section of this embodiment differs from the cross section of the embodiment shown in Figure 5, it is otherwise identical, so refer to Figure 4 for the cross section. Hereafter, likewise.) By means of this structure, regardless of whether the label strip 1 is wide or narrow, the required printing pressure can be adjusted. Furthermore, in this structure, a fixed base surface 90 is used as the standard for one side of the label strip 1 so, in contrast to the case of the embodiment shown in Figure 5, there is no need for a label guide device or label roll holder device, etc., to divide the width of the label strip 1 evenly around the center of the platen 35, thus the loading of the label strip 1 is easy and a simplified structure can be employed.

Next, Figure 7 shows the case of adjustment-free attachment of the thermal head 34, eliminating the adjusting screw 92, in which the oscillating support shaft 80 is provided on the centerline of wide label strip 1. By employing this structure, as in the embodiment shown in Figure 5, the thermal head attachment member 63 can oscillate as necessary to adjust the printing pressure automatically. Note that in this case, the width of a narrow label strip 1 is preferably at least half as wide as a wide label strip 1. The reason for this is that, in the event that a label strip 1 with one edge in contact with the fixed base surface 90 is so narrow that its other edge is located on the fixed base surface 90 side of the oscillating support shaft 80, balance in printing is difficult to achieve. Note that in this embodiment shown in Figure 7, the applicable range of widths of label strips which can be loaded is relatively narrow, but as in the case of the embodiment shown in Figure 6, the complex label guide devices and label roll holding devices, etc., such as those shown in Figure 5 need not be provided, so a simple structure can be employed.

Next, the structure shown in Figure 8 is a variation of the structure shown in Figure 7 in which the oscillating support shaft 80 is provided closer to the fixed base surface 90 from the centerline of a wide label strip 1. Therefore, even narrow label strips 1 narrower than those in the embodiment shown in Figure 7 will still be under the oscillating support shaft 80, so they can be printed while maintaining the printing balance, thus increasing the range of widths of label strips 1 which can be used. Other effects are as in the embodiment shown in Figure 7, so the details will be omitted here.

Next, the structure shown in Figure 9 is the structure shown in Figure 8 with the addition of an adjusting screw 92 attached to simplify adjustment of printing pressure when printing on tags etc., which are particularly stiff.

Thus as described in the foregoing, in the thermal price tag printer thermal head support structure according to this invention, the thermal head attachment member is attached in such a way that it is able to oscillate with respect to the platen, so an appropriate printing pressure can be maintained without requiring adjustment work, irrespective of the state of feeding or size of labels or the precision of assembly of the printer, so clear yet accurate printing can be carried out with a simple structure.

NUMERAL	PART
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5	01 label strip
	02 backing sheet
10	03 label
	10 portable thermal price tag printer
	11 case
15	11A vertical portion of case 11
	12 feeder section for label strip 1
	13 take-up section for label strip 1
20	14 passage for label strip 1
	15 printing section 15
25	16 redirecting member section
	17 data input section
	18 data display section
30	19 label cutting mechanism
	20 connector (for connecting to a power source)
35	21 transformer
	22 power switch
40	23 connector (for connecting to a full keyboard)
	24 connector (for connecting to a pen scanner)
	25 RS-232C connector
45	26 memory card
	27 socket for installing memory card 26
50	28 feeder spindle for label strip 1
	29 label presser

- 30 guide section for label strip 1
- 31 label guide spindle
- 32 label width control member
- 33 label position sensor
- 34 thermal head
- 35 platen
- 36 bending pin
- 37 label holder
- 38 take-up core
- 39 label removal sensor
- 40 opening/closing mechanism of thermal head 34
- 41 printing pressure switch mechanism
- 42 motor
- 43 timing belt
- 44 round belt
- 45 base board
- 46 handle
- 50 drive shaft
- 51 press member
- 52 rotating member for driving
- 53 switch operating lever
- 54 pair of support frames
- 55 arc-shaped guide channel
- 56 drive-side spring holder section
- 57 press member-side spring holder section
- 58 pressing spring
- 59 central post section

- 60 central sheath section
- 61 tip section for pressing
- 5 62 support member of thermal head 34
- 63 thermal head attachment member
- 10 64 thermal head press member
- 65 fixed spindle for rotation
- 66 oval-cross-sectioned free-fitting hole
- 15 67 protruding line
- 68 oval-cross-sectioned through hole formed by
20 protruding line 67
- 69 linking section
- 70 link mechanism
- 25 71 contact roller
- 72 fixed axle of link mechanism 70
- 30 73 opening/closing drive member
- 74 opening/closing operating lever
- 80 oscillating support shaft
- 35 81 washers
- 82 label guide mechanism
- 40 90 fixed base surface
- 91 movable guide surface
- 92 adjusting screw
- 45 P1 first position of drive shaft 50
- P2 second position of drive shaft 50

- D1 first distance from the position where the
tip section for pressing 61 contacts the
support member 62 (thermal head press member
64) to the first position P1 of drive shaft
50
- D2 second distance to the second position P1
- A direction of oscillation of thermal head
attachment member 63
- B direction of rotation of support member 62
of the thermal head 34

Claims

1. Thermal price tag printer in which price tags are fed between a platen (35) and a thermal head (34) and printing of said price tags is carried out, said printer comprising a thermal head support structure having:
a support member (62) for said thermal head (34) comprising a thermal head attachment member (63) to which said thermal head (34) is attached and a thermal head press member (64) used to press said thermal head (34) in the direction of said platen (35);
a fixed spindle (65) for rotation which rotatably supports said support member (62) of said thermal head (34); and
an oscillating support member (67;80) which supports said thermal head attachment member (63) in such a way that it is able to oscillate in a plane parallel to the axial direction of said platen (35),
characterized in that
said oscillating support member (67;80) is a pivot; and
a printing pressure switch mechanism (41) is provided for switching a pressing member 51 which presses said thermal head pressing member (64) from a first position in which label strips of tags are to be printed to a second position in which tags being stiffer than said label strips are to be printed, said pressure member (51) having, in said second position, a higher pressure than in said first position;
said printing pressure switch mechanism (41) comprises a drive shaft (50) and said press member (51), said drive shaft (50) being linked to a switch operating lever (53) through a rotating member (52) for driving between said first and second positions, said drive shaft (50) being movably fitted in a fixed guide channel (55) defining at its corresponding ends said first and second positions, said press member (51) including a drive-side spring holder section (56), a press member-side spring holder section (57) movably disposed relative to said drive-side spring holder section (56) and a pressing spring (58) mounted between said drive-side spring holder section (56) and said press member-side spring holder section (57), said drive-side spring holder section (56) being connected to said drive shaft (50), said press member-side spring holder section (57) has a tip section (61) being in elastic contact with said thermal head pressing member (64).

Patentansprüche

1. Preisetiketten-Thermodrucker, bei dem Preisetiketten zwischen einer Walze 35 und einem Thermodruckkopf (34) geführt werden und ein Bedrucken der Preisetiketten ausgeführt wird, wobei der Drucker, der einen Thermodruckkopf-Halterungsaufbau umfaßt, aufweist:
ein Trägerelement (62) für den Thermodruckkopf (34), das ein Thermodruckkopf-Befestigungselement (63) umfaßt, an dem der Thermodruckkopf (34) befestigt ist und ein Thermodruckkopf-Anpreßelement



- D1 first distance from the position where the
tip section for pressing 61 contacts the
support member 62 (thermal head press member
64) to the first position P1 of drive shaft
50
- D2 second distance to the second position P1
- A direction of oscillation of thermal head
attachment member 63
- B direction of rotation of support member 62
of the thermal head 34

Claims

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a support member (62) for said thermal head (34) comprising a thermal head attachment member (63) to which said thermal head (34) is attached and a thermal head press member (64) used to press said thermal head (34) in the direction of said platen (35);
a fixed spindle (65) for rotation which rotatably supports said support member (62) of said thermal head (34); and
an oscillating support member (67;80) which supports said thermal head attachment member (63) in such a way that it is able to oscillate in a plane parallel to the axial direction of said platen (35),
characterized in that
said oscillating support member (67;80) is a pivot; and
a printing pressure switch mechanism (41) is provided for switching a pressing member 51 which presses said thermal head pressing member (64) from a first position in which label strips of tags are to be printed to a second position in which tags being stiffer than said label strips are to be printed, said pressure member (51) having, in said second position, a higher pressure than in said first position;
said printing pressure switch mechanism (41) comprises a drive shaft (50) and said press member (51), said drive shaft (50) being linked to a switch operating lever (53) through a rotating member (52) for driving between said first and second positions, said drive shaft (50) being movably fitted in a fixed guide channel (55) defining at its corresponding ends said first and second positions, said press member (51) including a drive-side spring holder section (56), a press member-side spring holder section (57) movably disposed relative to said drive-side spring holder section (56) and a pressing spring (58) mounted between said drive-side spring holder section (56) and said press member-side spring holder section (57), said drive-side spring holder section (56) being connected to said drive shaft (50), said press member-side spring holder section (57) has a tip section (61) being in elastic contact with said thermal head pressing member (64).

Patentansprüche

1. Preisetiketten-Thermodrucker, bei dem Preisetiketten zwischen einer Walze 35 und einem Thermodruckkopf (34) geführt werden und ein Bedrucken der Preisetiketten ausgeführt wird, wobei der Drucker, der einen Thermodruckkopf-Halterungsaufbau umfaßt, aufweist:
ein Trägerelement (62) für den Thermodruckkopf (34), das ein Thermodruckkopf-Befestigungselement (63) umfaßt, an dem der Thermodruckkopf (34) befestigt ist und ein Thermodruckkopf-Anpreßelement



- (64) umfaßt, der verwendet wird, um den Thermodruckkopf (34) in Richtung der Walze (35) anzudrücken;
 eine feststehende Drehachse (65), die drehbar das Trägerelement (62) des Thermodruckkopfes (34) stützt; und
 5 ein schwingendes Trägerelement (67; 80), das das Thermodruckkopf Befestigungselement (63) in einer solchen Weise stützt, daß es in der Lage ist, in einer Ebene parallel zur Axialrichtung der Walze (35) zu schwingen,
 dadurch gekennzeichnet,
 daß das schwingende Trägerelement (67; 80) ein Schwenkelement ist; und
 10 daß ein Druckspannungs-Umschaltmechanismus (41) zum Umschalten eines Anpreßelementes (51) vorgesehen ist, daß das Thermodruckkopf-Anpreßelement (84) aus einer ersten Position, in der Etikettenstreifen von Etiketten zu bedrucken sind, in eine zweite Position, in der Etiketten, die steifer sind, als die in dem Etikettenstreifen zu bedruckenden Etiketten, drückt, wobei das Anpreßelement (51) in der zweiten Position einen höheren Druck hat, als in der ersten Position;
 15 wobei der Druckspannungs-Umschaltmechanismus (41) eine Antriebswelle (50) und das Anpreßelement (51) umfaßt, wobei die Antriebswelle (50) so mit einem Umschaltbetätigungshebel (53) über ein Drehelement (52) zum Antrieb zwischen der ersten und zweiten Position gekoppelt ist, wobei die Antriebswelle (50) beweglich in einer feststehenden Führungsauskehlung (55) eingepaßt ist, die an ihren entsprechenden Enden die erste und zweite Position begrenzt, wobei das Anpreßelement (51)
 20 einen antriebsseitigen Federhalterungsabschnitt (56), einen anpreßelementseitigen Federhalterungsabschnitt (57), der beweglich relativ zu dem antriebsseitigen Federhalterungsabschnitt (56) angeordnet ist und eine Druckfeder (58), die zwischen dem antriebsseitigen Federhalterungsabschnitt (56) und dem anpreßelementseitigen Federhalterungsabschnitt (57) angebracht ist, aufweist, wobei der antriebsseitige Federhalterungsabschnitt (56) mit der Antriebswelle (50) verbunden ist und wobei der anpreßelement-
 25 seitige Federhalterungsabschnitt (57) einen Spitzenabschnitt (61) aufweist, der in elastischem Kontakt mit dem Thermodruckkopf-Anpreßelement (64) befindlich ist.

Revendications

- 30 1. Imprimante thermique d'étiquettes de prix dans laquelle des étiquettes de prix sont chargées entre un cylindre (35) et une tête thermique (34) et une impression desdites étiquettes de prix est effectuée, ladite imprimante comprenant une structure de support de tête thermique ayant:
 un élément de support (62) pour ladite tête thermique (34) comprenant un élément (63) de fixation de tête thermique auquel ladite tête thermique (34) est fixée et un élément (64) de compression de tête
 35 thermique utilisé pour comprimer ladite tête thermique (34) dans la direction dudit cylindre (35);
 un axe de rotation fixe (65) qui supporte en rotation ledit élément de support (62) de ladite tête thermique (34); et
 un élément de support oscillant (67;80) qui supporte ledit élément (63) de fixation de tête thermique de telle manière qu'il puisse osciller dans un plan parallèle à la direction axiale dudit cylindre (35),
 40 caractérisée en ce que
 ledit élément (67;80) de support oscillant est un pivot; et
 un mécanisme (41) de commutation de pression d'impression est prévu pour faire commuter un élément de compression (51) qui comprime ledit élément (64) de compression de tête thermique entre
 45 une première position à laquelle des rubans d'étiquettes doivent être imprimés et une deuxième position à laquelle des étiquettes plus rigides que lesdits rubans d'étiquettes doivent être imprimées, ledit élément (51) de compression produisant, à ladite deuxième position, une pression plus élevée qu'à ladite première position;
 ledit mécanisme (41) de commutation de pression d'impression comprend un arbre (50) d'entraînement et ledit élément (51) de compression, ledit arbre d'entraînement (50) étant relié à un levier (53) d'actionnement de commutateur par l'intermédiaire d'un élément rotatif (52) destiné à produire un
 50 entraînement entre lesdites première et deuxième positions, ledit arbre d'entraînement (50) étant ajusté de façon mobile dans une rainure (55) de guidage fixe définissant à ses extrémités correspondantes lesdites première et deuxième positions, ledit élément de compression (51) comportant une section (56) de maintien de ressort du côté de l'entraînement, une section (57) de maintien de ressort du côté de l'élément de compression, disposé de façon mobile par rapport à ladite section (56) de maintien de
 55 ressort du côté de l'entraînement, et un ressort de compression (58) monté entre ladite section (56) de maintien de ressort du côté de l'entraînement et ladite section (57) de maintien de ressort du côté de



l'élément de compression, ladite section (56) de maintien de ressort du côté de l'entraînement étant reliée audit arbre d'entraînement (50), ladite section (57) de maintien de ressort du côté de l'élément de compression a une section de pointe (61) en contact élastique avec ledit élément (64) de compression de la tête thermique.

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