

Description

This invention is directed to systems including devices, such as typewriters, which utilize at least two different cassettes, such as a typewriter ribbon cassette and a correction cassette.

Various prior art devices disclose means by which the operability of a typewriter or printer is controlled by the condition or type of cassette present in the typewriter or printer. U.S. Pat. No. 4,636,097, for example, includes means for rendering the printer inoperable when the end of the typewriter ribbon in a cassette is sensed, or when there is no cassette in the printer. Another such device is disclosed in IBM Technical Disclosure Bulletin, Vol. 25, No. 4, September 1982. The cassette disclosed therein provides a signal to the device (such as a typewriter) which identifies the contents of the cassette, so that the device may adjust to the characteristics of the cassette contents. Still another such device is disclosed in U.S. Pat. No. 4,516,137 wherein the presence or absence of a thermal ribbon cassette is sensed by the printer. If a thermal ribbon cassette is present, the printer can print only unidirectionally, whereas when the ribbon cassette is not present, the printer prints bi-directionally.

Patent Abstracts of Japan, Vol. 10, No. 216 (M-502) [2272], re. JP-A1-6154975, describes a system wherein the presence or absence of a detector on an ink ribbon cassette in a device is used (via a selection switch 24) to select an appropriate printing pressure in that device.

Patent Abstracts of Japan Vol. 9, No. 98 (M-375) [1821], re JP-A-59222380, describes a system wherein a tab/pair of tabs is provided on each monocolour ribbon cassette of the system so as to activate switches when inserted into a device to identify to that device the colour of the ribbon in the inserted cassette.

There are, in addition, prior art devices which disclose means for connecting a ribbon cassette to a correcting cassette. Examples of such prior art devices are U.S. Pat. No. 4,239,107 and U.S. Pat. No. 4,302,118. The '118 patent discloses mating formations adapted to place a ribbon cassette in register with a correcting cassette, and also discloses means on the cassette which control the selection of the correct feed and ribbon lift mechanism.

Unlike the present invention none of the above described pieces of prior art discloses the provision of means for making certain that in devices such as typewriters, which may utilize at least two different cassettes, such as a ribbon cassette and a correcting cassette, the cassettes are functionally compatible with each other.

In common practice, a typewriter ribbon cassette includes a plastic jacketing in which the ribbon and various components are conveniently housed. These

components may include, among other things, a supply spool upon which a supply of typewriter ribbon is located, mechanism for assuring the uniform withdrawal of ribbon from the supply spool to the typewriter print point, and a take-up spool on which the typed ribbon is located. A typewriter drive mechanism rotates the take-up spool to cause fresh ribbon from the supply spool to advance to the print point. A typewriter ribbon cassette of this type is disclosed in U.S. Pat. No. 4,302,118.

Such typewriter ribbon cassettes may contain various types of ribbons. For example, the ribbon may be of the single-strike carbon ribbon type or of the multiple-strike carbon ribbon type. If the ribbon is a single-strike carbon ribbon, the ribbon is incrementally fed in such a manner that upon a single character being typed on a portion of the ribbon, the ribbon is advanced so that the next character is typed on a fresh portion of the ribbon.

If the ribbon is a multiple-strike ribbon, such as the "Multi-Strike" ribbon sold by Smith Corona Corporation, the ribbon is incrementally fed in such a manner that upon a character being typed on a ribbon, the ribbon is advanced a lesser distance so that the next character is typed on a ribbon portion comprising both a typed ribbon portion and a fresh ribbon portion. In this manner, significantly more characters may be typed on a multiple-strike ribbon than on a single-strike ribbon.

A typewriter correcting cassette may also include a plastic jacketing for conveniently housing a correcting tape and various components. As in the typewriter ribbon cassette, the components of a correcting cassette may include a supply spool, means for assuring the uniform withdrawal of correcting tape from the supply spool, and a take-up spool. Here too, the correcting tape may be of two types, namely, the type commonly referred to as "lift-off" tape, in which the tape, upon striking the unwanted character, removes the unwanted character from the paper, or the type commonly referred to as "cover-up" tape, in which, upon the tape striking the unwanted character, a powdered material on the tape is transferred to and covers up the unwanted character on the paper.

In the existing market, with few, if any, exceptions, lift-off correcting tape is only compatible with single-strike carbon ribbons, and cover-up correcting tape is only compatible with multiple-strike carbon ribbons. Each combination of cassettes having compatible ribbon and correcting tapes may be termed a cassette combination or assembly. Therefore, in a typewriter which permits the use of both single-strike and multiple-strike ribbons as well as both lift-off and cover-up correcting tapes, it is desirable to provide means to assure that the lift-off correcting tape is used only with single-strike carbon ribbons and that the cover-up tape is used only with multiple-strike ribbons. The present invention is directed to means for

providing a simple, reliable means to assure that the lift-off tape cassette can be used only with the single-strike ribbon cassette and that the cover-up tape cassette can be used only with the multiple-strike ribbon cassette.

That is achieved, in general, by providing the cassette with means for assuring that the cassette is functionally compatible with the corresponding second cassette of the combination or assembly upon the cassettes being inserted into a device, such as a typewriter in a system which utilizes the cassettes.

According to the present invention, if it is attempted to utilize a cassette having the foregoing means with a second cassette which is not compatible with that cassette, i.e., of a different cassette combination, the means for assuring cassette compatibility will prevent the first cassette from being properly placed in the device and indicating to the operator that an attempt is being made to place into the device a cassette which is not compatible with another being so placed.

The present invention provides a system utilizing a cassette assembly including selectively combinable first and second cassettes, said system comprising in combination:

a device in which an assembly of a first and a second cassette are inserted for operation of the device;

a first cassette for use in said device, said first cassette having an ink ribbon; and

a second cassette for use in said device, said second cassette having a correction tape;

characterised in that there is further provided compatibility means comprising:

a first structural feature provided on said first cassette at a location corresponding to the type of ink ribbon in said first cassette,

a second structural feature provided on said second cassette at a location corresponding to the type of correction tape in said second cassette,

the first and second structural features being adapted for inhibiting the proper mounting of said first and second cassettes in the device unless the ink ribbon in the first cassette is compatible with the correction tape in the second cassette.

The present invention further provides a method for assembling a system including a device and at least one assembly of selectively combinable first and second cassettes adapted for insertion into the device, the method comprising the steps of:

providing the first cassette with an ink ribbon;

providing the second cassette with a correction tape; and

inserting the first and second cassettes into the device;

characterised in that there is further provided the step of providing on said cassettes compatibility means, said compatibility means being disposed on

said first and second cassettes in assembly-specific locations corresponding to the type of ribbon in said first cassette and the type of correction tape in said second cassette for inhibiting cassettes having incompatible ink ribbon and correction tape combinations from being properly placed in said device.

Cassette compatibility is also achieved, in general, by providing a switch means in the typewriter, printer, or the like, which controls the on - off condition of the typewriter, and means located on the ribbon cassette that activates the on-off typewriter switch means. According to the present invention, the ribbon cassette activating means will not activate the on-off typewriter switch when functionally incompatible cassettes are present in the typewriter. In other words, the ribbon cassette activating means will activate the on-off typewriter switch only when either a single-strike ribbon cassette and a cover-up correction tape cassette are present in the typewriter or when a multiple-strike ribbon cassette and a lift-off correction tape cassette are present in the typewriter.

A further understanding of the present invention may be had when the following detailed description is read in conjunction with the accompanying drawings, in which:

FIG. 1 is an exploded top perspective view of the present invention showing a cassette combination including a first typewriter ribbon cassette, a first correction tape cassette, and a partial view of a shiftable bracket section which carries the ribbon cassette and correction tape thereon;

FIG. 2 is an exploded top perspective view of the present invention showing a cassette combination including a second typewriter ribbon cassette, a second correction tape cassette, and a partial view of a shiftable bracket section which carries the ribbon cassette and correction tape thereon;

Fig. 3 is an exploded top perspective view of the cassette combination of Fig. 1 used in a typewriter having an on-off switch mechanism with which the cassette combination may interact;

Fig. 4 is an exploded top perspective view of the cassette combination of Fig. 2 used in a typewriter having an on-off switch mechanism with which the cassette combination may interact;

Fig. 5 is an exploded top perspective view of the present invention used in a typewriter having an on-off switch mechanism and shows a partial view of the switch activating means located on the first typewriter ribbon cassette, a partial view of the shiftable bracket section which carries the ribbon cassette and correction tape thereon, and the on-off switch;

Fig. 6 is a side elevational view of the present invention used as in Fig. 5, showing an on-off switch in its normally closed position whereby power cannot be supplied to the device; and

Fig. 7 is a side elevational view of the present invention used as in Fig. 5, showing an on-off switch in its normally opened position whereby power can be supplied to the device.

There is shown in Fig. 1 a first typewriter ribbon cassette 2 having a housing 4 within which a first typewriter ribbon 6 (which may be of the single-strike carbon ribbon type), and various other components, are housed. A formation 8, such as a tab, extends from the right-hand portion of the bottom of the housing 4 for a purpose to be described hereinafter. As noted above, a single-strike carbon ribbon is of the type which is incrementally fed in such a manner that upon a character being typed on a ribbon portion, the ribbon is advanced so that the next character is typed on a fresh portion of the ribbon. These components, not shown, may include, among other things, a supply spool upon which a typewriter ribbon supply is located, a mechanism for assuring the uniform withdrawal of ribbon from the supply spool to the typewriter print point, and a take-up spool on which the typed ribbon is located. Such a cassette is presently being sold by Smith Corona Corporation under its "H Correctable" mark.

Also in Fig. 1, there is disclosed a first correction tape cassette 10 which is functionally compatible with the first typewriter ribbon cassette 2, and within which a first correction tape 12 of, for example, the lift-off type, together with other components, is housed. The ribbon cassette 2 and the functionally compatible correction cassette 10 may be designated a cassette combination or assembly. In operation, to delete an unwanted typed character from a document, the lift-off tape is raised to the print point over the character, and the unwanted character on the type element is positioned to strike the lift-off tape. Typewriter actuating means causes the type element to strike the lift-off tape against the unwanted character on the paper, and the lift-off tape withdraws the unwanted character from the paper.

The components (not shown) in the first correction tape cassette 10 may include a supply roll of correcting tape, means for assuring the uniform withdrawal of correcting tape from the supply spool and a take-up spool. The first correction tape cassette 10 also includes a flat portion 14 having a formation 16 illustrated as an opening, in the right-hand portion, through which the tab formation 8 of the first typewriter ribbon cassette 2 extends when the cassettes are inserted into the typewriter.

Fig. 1 further discloses a shiftable bracket section 18 adapted to operationally accommodate the first typewriter ribbon cassette 2 and the first correction tape cassette 10 thereon. The shiftable bracket section 18 is pivotable about pivot points 20 by conventional typewriter means (not shown) for presenting either the first typewriter ribbon 6 or the lift-off first correction tape 12 to the typewriter print point.

The engagement of the tab formation 8 of the ribbon cassette 2 with the opening formation 16 of the first correct tape cassette 10 ensures that the cassettes are compatible with each other. The cassettes 2 and 10 are configured so that unless the formations 8 and 16 are in operational engagement, the cassette assembly will not be capable of being inserted in the typewriter. Consequently, the typewriter will be inoperable.

Fig. 2 shows a second typewriter ribbon cassette 2a and a second correction tape cassette 10a which are generally similar in construction to the first typewriter ribbon cassette 2 and the first correction tape 10 shown in Fig. 1. Therefore, in large part, the same numerical reference numerals will be used in Fig. 2 as were used in Fig. 1, except that the letter "a" will be added to the reference numerals of Fig. 2.

There is shown in Fig. 2 the second typewriter ribbon cassette 2a having a housing 4a within which a second typewriter ribbon 6a, which may be of the multiple-strike carbon ribbon type, and various other components are housed. A formation 44 such as a tab extends from the left-hand portion of the bottom of the housing 4a for the purpose to be hereinafter described. As noted above, a multiple-strike carbon ribbon is of the type which is incrementally fed in such a manner that upon a character being typed on a ribbon portion, the ribbon is advanced so that the next character is typed on a ribbon portion comprising both a typed ribbon portion and a fresh ribbon portion. These components (not shown) may include, among other things, a supply spool upon which a typewriter ribbon supply is located, mechanism for assuring the uniform withdrawal of ribbon from the supply spool to the typewriter print point, and a take-up spool on which the typed ribbon is located. Such a cassette is presently being sold by Smith Corona Corporation under its "H Multi-Strike" mark.

There is further shown in Fig. 2 the second correction tape cassette 10a which is functionally compatible with the second typewriter ribbon cassette 2a, and within which a second correction tape 12a of, for example, the cover-up type, together with other components, is housed. The ribbon cassette 2a and the functionally compatible correction cassette 10a may be designated a cassette combination or assembly. In operation, to delete an unwanted typed character from a document, the cover-up tape is raised to the print point over the character, and the unwanted character on the type element is positioned to strike the cover-up tape. Typewriter actuating means causes the type element to strike the cover-up tape against the unwanted character on the paper, and the cover-up tape is transferred to and covers up the unwanted character.

The components (not shown) in the second correction tape cassette 10a may include a supply roll of correcting tape, means for assuring the uniform with-

drawal of correcting tape from the supply spool, and a take-up spool. The second correction-tape cassette 10a also includes a flat portion 14a having a formation 46 illustrated as an opening in the left-hand portion, through which the tab 44 of the second typewriter ribbon cassette 2a extends when the cassettes are inserted into the typewriter. The shiftable bracket section 18 shown in Fig. 2 is the same bracket section shown in Fig. 1. The engagement of the tab formation 44 of the ribbon cassette 2a with the opening formation 46 of the second correct tape cassette 10a ensures that the cassettes are compatible with each other. The cassettes 2a and 10a are configured so that unless the formations 44 and 46 are in operational engagement, the cassettes will not be capable of being inserted in the bracket section 18. Consequently, the typewriter will be inoperable.

In operation, downward movement of the tab formation 8, will only occur when the right-hand tab formation 8 can extend through the right-hand opening formation 16 in the flat portion 14 in compatible first correction tape cassette 10. If, however, instead of the first correction tape cassette 10 being present in the typewriter, an incompatible correction tape cassette, such as second correction tape cassette 10a, is present, which has no opening or only a left-hand opening formation 46 in the flat portion 14a, the tab formation 8 cannot extend downwardly through the opening, preventing seating of the first cassette 2 on the second correction tape, and immediately indicating to the operator, by the physical interference of tab 8 holding the first cassette 2 above and not squarely against correction tape cassette 10a, that an attempt has been made to place an incompatible cassette into the typewriter.

Similarly, with respect to the second typewriter ribbon cassette 2a, proper insertion of the cassette will only occur when the left-hand tab formation 44 can extend through the left-hand opening formation 46 in the flat portion 14a in compatible second correction tape cassette 10a. If, however, instead of second correction tape cassette 10a being present in the typewriter, an incompatible first correction tape cassette is present, such as in this case cassette 10, which has only the right-hand opening 16 in the flat portion 14, the tab formation 44 cannot extend downwardly through the opening formation 46, preventing the seating of the second ribbon cassette upon the second correction tape cassette 10a. Thus, it will be seen that with respect to the embodiment shown in Figs. 1 and 2, the typewriter will not be operable when either the first typewriter ribbon cassette 2 and the second correction tape cassette 10a, or the second typewriter ribbon cassette 2a and the first correction tape cassette 10 are present therein.

According to the present invention cassette compatibility may further be assured in a typewriter which has an on-off switch means as illustrated in Figs. 3-

7.

Figs. 3, 5 and 7 show the first typewriter ribbon cassette 2 and the first correction tape cassette 10 of Fig. 1, thus in large part the same numerical reference numerals will be used in Figs. 3, 5 and 7 as were used in Fig. 1. Fig. 4 shows the second typewriter ribbon cassette 2a and second correction tape cassette 10a of Fig. 2, thus in large part the same numerical reference numerals will be used in Fig. 4 as were used in Fig. 2.

As shown in Figures 3 and 5, the shiftable bracket section 18 has an opening 22 and an opening 24 in a front portion 26. A clip 28 is clamped to the shiftable bracket section 18. An on-off switch rocker 30 (the operation of which will be described hereinafter) is assembled to the shiftable bracket section 18 by means of a first finger 32 of the on-off switch rocker 30 extending through the opening 24 of shiftable bracket section 18. A notch 34 in switch rocker 30 receives a wall portion 36 of the opening 24. The first finger 32 seated against the wall portion 36 provides a first pivot point for the on-off switch rocker 30.

A second finger 38 of the on-off switch rocker 30 extends through the opening 22 in shiftable bracket section 18 and abuts against a wall portion 40 of the opening 22 to provide a second pivot point for the on-off switch rocker 30. The second finger 38 is integrally molded with the on-off switch rocker 30 in such a manner that the second finger 38 is biased against the wall portion 40 and causes the first finger 32 to be biased against the wall portion 36 for holding the on-off switch rocker 30 assembled to the shiftable bracket section 18. The first pivot point of the first finger 32 is substantially in alignment with the second pivot point of the second finger 38 to provide a common axis 42 for pivoting the on-off switch rocker 30 relative to the shiftable bracket section 18.

The shiftable bracket section 18 shown in Fig. 4 is the same bracket section shown in Fig. 3. The on-off switch rocker 30 shown in Fig. 5 includes a generally planar portion 48 having two rearwardly extending arms 50 on which an upwardly extending right-hand finger 52 and an upwardly extending left-hand finger 54 are located. A spring means 56 is connected at one end to the on-off switch rocker 30 and at its opposite end to the shiftable bracket section 18 at spring aperture 58. The spring 56 biases the on-off switch rocker 30 counterclockwise about the common axis 42.

A switch 60 has a first switch contact 62 and a second switch contact 64. The first switch contact 62 is securely mounted on the on-off switch rocker 30. The first switch contact 62 has an elongated contact surface with the elongation arranged substantially parallel relative to the common axis 42. The second switch contact 64 is securely mounted on the clip 28 which is assembled to the shiftable bracket section 18. The second switch contact 64 has an elongated

contact surface with the elongation arranged substantially perpendicular relative to the first switch contact 62. Although the contacts may be of different shapes, it has been found desirable to make the shapes elongated to reduce the manufacturing tolerances required to have the first switch contact 62 efficiently contact the second switch contact 64 during initial assembly and during continual typewriter operation thereafter. The first and second switch contacts 62 and 64 are connected to electronics 66 mounted in the typewriter by lead lines 68. The electronics 66 is connected to a power source for controlling the flow of electricity to the typewriter.

Referring to Fig. 6, the spring 56 biases the on-off switch rocker 30 counterclockwise relative to the shiftable bracket section 18 to bias the first switch contact 62 in contact with the second switch contact 64 for closing the switch 60. The switch 60 is closed when neither the first typewriter ribbon cassette 2 nor the second typewriter ribbon cassette 2a is inserted in the typewriter. The electronics 66 senses that the switch 60 is closed and thereby prevents the flow of electricity to the typewriter.

Referring to Fig. 7, when the first typewriter ribbon cassette 2 is inserted into the typewriter, the tab 8 contacts the right-hand finger 52 and pivots the on-off switch rocker 30 clockwise relative to the shiftable bracket section 18 to open the switch 60. Likewise, when the second typewriter ribbon cassette 2a is inserted into the typewriter, the tab 44 contacts the left-hand finger 54 and pivots the on-off switch rocker 30 clockwise to open the switch 60 (Fig. 4). When the electronics 66 senses that the switch 60 is open, it permits the flow of electricity to the typewriter.

Downward movement of the tab 8, and thus the flow of electricity to the typewriter, will only occur when the right-hand tab 8 can extend through the right-hand opening 16 in the flat portion 14 in compatible first correction tape cassette 10. If, however, instead of the first correction tape cassette 10 being present in the typewriter, incompatible second correction tape cassette 10a is present, which has only a left-hand opening 46 in the flat portion 14a, the tab 8 cannot extend downwardly to pivot the on-off switch rocker 30 clockwise, and the flow of electricity to the typewriter cannot occur.

Similarly, with respect to the second typewriter ribbon cassette 2a, the flow of electricity to the typewriter will only occur when the left-hand tab 44 can extend through the left-hand opening 46 in the flat portion 14a in compatible second correction tape cassette 10a. If, however, instead of second correction tape cassette 10a being present in the typewriter, incompatible first correction tape cassette 10 is present, which has only the right-hand opening 16 in the flat portion 14, the tab 44 cannot extend downwardly to pivot the on-off switch rocker 30 clockwise and the flow of electricity to the typewriter cannot occur.

Thus, it will be seen that with respect to the embodiment shown in Figs. 3 to 7, the flow of electricity will not occur when either the first typewriter ribbon cassette 2 and the second correction tape cassette 10a, or the second typewriter ribbon cassette 2a and the first correction tape cassette 10 are present in the typewriter.

Claims

1. A system utilising a cassette assembly including selectively combinable first and second cassettes, said system comprising in combination:
 - a device in which an assembly of a first (2/2a) and a second (10/10a) cassette are inserted for operation of the device;
 - a first cassette (2/2a) for use in said device, said first cassette having an ink ribbon (6/6a); and
 - a second cassette (10/10a) for use in said device, said second cassette having a correction tape (12/12a);
 characterised in that there is further provided compatibility means comprising:
 - a first structural feature (8/44) provided on said first cassette (2/2a) at a location corresponding to the type of ink ribbon (6/6a) in said first cassette,
 - a second structural feature (16/46) provided on said second cassette (10/10a) at a location corresponding to the type of correction tape (12/12a) in said second cassette,
 - the first (8/44) and second (16/46) structural features being adapted for inhibiting the proper mounting of said first and second cassettes in the device unless the ink ribbon in the first cassette is compatible with the correction tape in the second cassette.
2. The system in accordance with claim 1, wherein said first cassette (2/2a) includes a housing (4/4a), said first structural feature (8/44) being located on said housing (4/4a) to depend therefrom.
3. The system in accordance with claim 1 or 2 wherein said first cassette (2) of said cassette assembly has a single strike type carbon type ribbon (6) and said second cassette (10) has a lift-off type correcting tape (12).
4. The system in accordance with claim 1 or 2 wherein said first cassette (2a) of said cassette assembly includes a multiple-strike type carbon ribbon (6a) and said second cassette (10a) has a cover-up type correction tape (12a).

contact surface with the elongation arranged substantially perpendicular relative to the first switch contact 62. Although the contacts may be of different shapes, it has been found desirable to make the shapes elongated to reduce the manufacturing tolerances required to have the first switch contact 62 efficiently contact the second switch contact 64 during initial assembly and during continual typewriter operation thereafter. The first and second switch contacts 62 and 64 are connected to electronics 66 mounted in the typewriter by lead lines 68. The electronics 66 is connected to a power source for controlling the flow of electricity to the typewriter.

Referring to Fig. 6, the spring 56 biases the on-off switch rocker 30 counterclockwise relative to the shiftable bracket section 18 to bias the first switch contact 62 in contact with the second switch contact 64 for closing the switch 60. The switch 60 is closed when neither the first typewriter ribbon cassette 2 nor the second typewriter ribbon cassette 2a is inserted in the typewriter. The electronics 66 senses that the switch 60 is closed and thereby prevents the flow of electricity to the typewriter.

Referring to Fig. 7, when the first typewriter ribbon cassette 2 is inserted into the typewriter, the tab 8 contacts the right-hand finger 52 and pivots the on-off switch rocker 30 clockwise relative to the shiftable bracket section 18 to open the switch 60. Likewise, when the second typewriter ribbon cassette 2a is inserted into the typewriter, the tab 44 contacts the left-hand finger 54 and pivots the on-off switch rocker 30 clockwise to open the switch 60 (Fig. 4). When the electronics 66 senses that the switch 60 is open, it permits the flow of electricity to the typewriter.

Downward movement of the tab 8, and thus the flow of electricity to the typewriter, will only occur when the right-hand tab 8 can extend through the right-hand opening 16 in the flat portion 14 in compatible first correction tape cassette 10. If, however, instead of the first correction tape cassette 10 being present in the typewriter, incompatible second correction tape cassette 10a is present, which has only a left-hand opening 46 in the flat portion 14a, the tab 8 cannot extend downwardly to pivot the on-off switch rocker 30 clockwise, and the flow of electricity to the typewriter cannot occur.

Similarly, with respect to the second typewriter ribbon cassette 2a, the flow of electricity to the typewriter will only occur when the left-hand tab 44 can extend through the left-hand opening 46 in the flat portion 14a in compatible second correction tape cassette 10a. If, however, instead of second correction tape cassette 10a being present in the typewriter, incompatible first correction tape cassette 10 is present, which has only the right-hand opening 16 in the flat portion 14, the tab 44 cannot extend downwardly to pivot the on-off switch rocker 30 clockwise and the flow of electricity to the typewriter cannot occur.

Thus, it will be seen that with respect to the embodiment shown in Figs. 3 to 7, the flow of electricity will not occur when either the first typewriter ribbon cassette 2 and the second correction tape cassette 10a, or the second typewriter ribbon cassette 2a and the first correction tape cassette 10 are present in the typewriter.

Claims

1. A system utilising a cassette assembly including selectively combinable first and second cassettes, said system comprising in combination:
 - a device in which an assembly of a first (2/2a) and a second (10/10a) cassette are inserted for operation of the device;
 - a first cassette (2/2a) for use in said device, said first cassette having an ink ribbon (6/6a); and
 - a second cassette (10/10a) for use in said device, said second cassette having a correction tape (12/12a);
 characterised in that there is further provided compatibility means comprising:
 - a first structural feature (8/44) provided on said first cassette (2/2a) at a location corresponding to the type of ink ribbon (6/6a) in said first cassette,
 - a second structural feature (16/46) provided on said second cassette (10/10a) at a location corresponding to the type of correction tape (12/12a) in said second cassette,
 - the first (8/44) and second (16/46) structural features being adapted for inhibiting the proper mounting of said first and second cassettes in the device unless the ink ribbon in the first cassette is compatible with the correction tape in the second cassette.
2. The system in accordance with claim 1, wherein said first cassette (2/2a) includes a housing (4/4a), said first structural feature (8/44) being located on said housing (4/4a) to depend therefrom.
3. The system in accordance with claim 1 or 2 wherein said first cassette (2) of said cassette assembly has a single strike type carbon type ribbon (6) and said second cassette (10) has a lift-off type correcting tape (12).
4. The system in accordance with claim 1 or 2 wherein said first cassette (2a) of said cassette assembly includes a multiple-strike type carbon ribbon (6a) and said second cassette (10a) has a cover-up type correction tape (12a).



5. The system in accordance with claim 3 or 4, wherein said compatibility means includes said first cassette (2/2a) having a depending tab formation (8/44) and said second cassette (10/10a) having an opening formation (16/46), said tab formation (8/44) engaging said opening formation (16/46).
6. A system in accordance with any previous claim, wherein the compatibility means includes said first cassette (2/2a) having a tab (8/44) thereon which may be located on one of at least two portions of said first cassette (2/2a), said location being dependent upon the particular type of ink ribbon (6/6a) in the first cassette (2/2a), and said second cassette (10/10a) having an opening (16/46) therein which may be located in either one of two portions of said cassette (10/10a), said location being dependent upon the particular type of correction tape (12/12a) in second cassette (10/10a); and wherein the location of the first cassette tab (8/44) and the location of the second cassette opening (16/46) are in alignment to permit the first cassette tab (8/44) to extend through the second cassette opening (16/46) only when the particular type of ink ribbon (6/6a) in said first cassette (2/2a) is functionally compatible with the particular type of correction tape (12/12a) in the second cassette (10/10a).
7. The system in accordance with claim 5 or 6, wherein the tab (8/44) is on the right-hand side of the first cassette (2/2a) and wherein the opening (16/46) in the second cassette (10/10a) is on the right-hand side of the second cassette (10/10a).
8. The system in accordance with claim 5 or 6, where the tab portion (8/44) is on the left-hand side of the first cassette (2/2a) and wherein the opening (16/46) in the second cassette (10/10a) is on the left-hand side of the second cassette (10/10a).
9. The system in accordance with any previous claim, and further comprising a switch (60) mounted on said device and connected to a power source for controlling the flow of electricity to said device; wherein the compatibility means (8, 16/44, 46) is adapted to enable operation of the switch (60) to permit the flow of electricity from the power source to said device to activate said device only when the ink ribbon (6/6a) in the first cassette (2/2a) is compatible with the correction tape (12/12a) in the second cassette (10/10a).
10. The system in accordance with claim 9 wherein the first (2/2a) and second (10/10a) cassettes are carried by a bracket section (18) on said device, said bracket section including said switch (60).
11. The system in accordance with any previous claim, wherein the device is a typewriter.
12. A method for assembling a system including a device and at least one assembly of selectively combinable first (2/2a) and second (10/10a) cassettes adapted for insertion into the device, the method comprising the steps of:
 - providing the first cassette (2/2a) with an ink ribbon (6/6a);
 - providing the second cassette (10/10a) with a correction tape (12/12a); and
 - inserting the first (2/2a) and second (10/10a) cassettes into the device;
 characterised in that there is further provided the step of providing on said cassettes (2, 10/2a, 10a) compatibility means (8, 16/44, 46), said compatibility means (8, 16/44, 46) being disposed on said first (2/2a) and second (10/10a) cassettes in assembly-specific locations corresponding to the type of ribbon (6/6a) in said first cassette (2/2a) and the type of correction tape (12/12a) in said second cassette (10/10a) for inhibiting cassettes having incompatible ink ribbon and correction tape combinations from being properly placed in said device.
13. The method in accordance with claim 12, further comprising the step of providing the device with a switch (60) operable to activate the device, and wherein the step of providing said compatibility means (8, 16/44, 46) on said cassettes (2, 10/2a, 10a) comprises providing compatibility means (8, 16/44, 46) adapted, on insertion of the first (2/2a) and second (10/10a) cassettes into the device, to enable operation of said switch (60) to activate the device if the ink ribbon (6/6a) of the first cassette (2/2a) is compatible with the correction tape (12/12a) of the second cassette (10/10a).
14. The method according to claim 12 or 13, wherein the step of providing compatibility means (8, 16/44, 46) on said cassettes (2, 10/2a, 10a) comprises providing a tab (8/44) on said first cassette (2/2a).
15. The method according to claim 12, 13 or 14, wherein the step of providing compatibility means (8, 16/44, 46) on said cassettes (2, 10/2a, 10a) comprises providing an opening (16/46) on said second cassette (10/10a).
16. The method according to any one of claims 12 to



15, wherein the step of providing the first cassette (2/2a) with an ink ribbon (6/6a) comprises providing the first cassette (2) with a single strike type carbon ribbon (6), and the step of providing the second cassette (10/10a) with a correction tape (12/12a) comprises providing the second cassette (10) with a lift-off type correction tape (12).

17. The method according to any one of claims 12 to 15, wherein the step of providing the first cassette (2/2a) with an ink ribbon (6/6a) comprises providing the first cassette (2a) with a multiple-strike type carbon ribbon (6a), and the step of providing the second cassette (10/10a) with a correction tape (12/12a) comprises providing the second cassette (10a) with a cover-up type correction tape (12a).

Patentansprüche

1. System, das eine Kassettenanordnung verwendet, die eine wahlweise kombinierbare erste und zweite Kassette umfaßt, wobei das System folgende Merkmale aufweist:
Eine Vorrichtung, in der eine Anordnung einer ersten (2/2a) und einer zweiten (10/10a) Kassette zum Betrieb der Vorrichtung eingesetzt wird; eine erste Kassette (2/2a) zur Verwendung in der Vorrichtung, wobei die erste Kassette ein Farbband (6/6a) besitzt; und eine zweite Kassette (10/10a) zur Verwendung in der Vorrichtung, wobei die zweite Kassette ein Korrekturband (12/12a) besitzt; dadurch gekennzeichnet, daß weiterhin kompatible Einrichtungen vorgesehen sind mit:
Einem ersten strukturellen Merkmal (8/44), das an der ersten Kassette (2/2a) an einer Stelle entsprechend der Art des Farbbandes (6/6a) in der ersten Kassette angeordnet ist;
ein zweites strukturelles Merkmal (16/46), das an der zweiten Kassette (10/10a) an einer Stelle entsprechend des Typs des Korrekturbands (12/12a) in der zweiten Kassette angeordnet ist, wobei das erste (8/44) und das zweite (16/46) strukturelle Merkmal dazu geeignet sind, die geeignete Befestigung der ersten und der zweiten Kassette in der Vorrichtung zu verhindern, ohne daß das Farbband in der ersten Kassette mit dem Korrekturband in der zweiten Kassette kompatibel ist.
2. System nach Anspruch 1, wobei die erste Kassette (2/2a) ein Gehäuse (4/4a) umfaßt, wobei das erste strukturelle Merkmal (8/44) an dem Gehäuse (4/4a) angeordnet ist, um sich davon zu erstrecken.

3. System nach Anspruch 1 oder 2, wobei die erste Kassette (2) der Kassettenanordnung ein Carbonband (6) vom Single-Strike-Typ besitzt und die zweite Kassette (10) ein Korrekturband (12) vom Abhebttyp besitzt.

4. System nach Anspruch 1 oder 2, wobei die erste Kassette (2a) der Kassettenanordnung ein Carbonband (6a) vom Multi-Strike-Typ besitzt und die zweite Kassette (10a) ein Korrekturband (12a) vom Abhebttyp besitzt.

5. System nach Anspruch 3 oder 4, wobei die Kompatibilitätseinrichtung die erste Kassette (2/2a), die eine sich davon erstreckende Laschenformation (8/44) besitzt, und die zweite Kassette (10/10a), die eine Öffnungsformation (16/46) besitzt, aufweist, wobei die Laschenformation (8/44) in die Öffnungsformation (16/46) eingreift.

6. System nach einem der vorhergehenden Ansprüche, wobei die Kompatibilitätseinrichtung die erste Kassette (2/2a), die eine Lasche (8/44) daran besitzt, die an einem von mindestens zwei Bereichen der ersten Kassette (2/2a) angeordnet sein kann, wobei die örtliche Stelle von dem besonderen Typ des Farbbands (6/6a) in der ersten Kassette (2/2a) abhängig ist, und daß die zweite Kassette (10/10a) eine Öffnung (16/46) darin besitzt, die in irgendeinem der zwei Bereiche der Kassette (10/10a) angeordnet sein kann, wobei die örtliche Stelle in Abhängigkeit des besonderen Typs des Korrekturbands (12/12a) in der zweiten Kassette (10/10a) abhängig ist; und wobei die Stelle der Lasche der ersten Kassette (8/44) und die Stelle der Öffnung (16/46) der zweiten Kassette sich in Ausrichtung zueinander befinden, um der Lasche (8/44) der ersten Kassette zu ermöglichen, daß sie sich durch die Öffnung (16/46) der zweiten Kassette nur dann erstreckt, wenn der besondere Typ des Farbbands (6/6a) in der ersten Kassette (2/2a) funktionell mit dem besonderen Typ des Korrekturbands (12/12a) in der zweiten Kassette (10/10a) kompatibel ist.

7. System nach Anspruch 5 oder 6, wobei die Lasche (8/44) auf der rechten Seite der ersten Kassette (2/2a) vorhanden ist und wobei die Öffnung (16/46) in der zweiten Kassette (10/10a) an der rechten Seite der zweiten Kassette (10/10a) vorhanden ist.

8. System nach Anspruch 5 oder 6, wobei sich der Laschenbereich (8/44) an der linken Seite der ersten Kassette (2/2a) befindet und wobei sich die Öffnung (16/46) in der zweiten Kassette (10/10a)



an der linken Seite der zweiten Kassette (10/10a) befindet.

9. System nach einem der vorhergehenden Ansprüche, das einen Schalter (60) umfaßt, der an der Vorrichtung befestigt ist und mit einer Energieversorgungssteuerung des elektrischen Stroms zu der Vorrichtung verbunden ist; wobei die Kompatibilitätseinrichtung (8, 16/44, 46) dazu geeignet ist, den Betrieb des Schalters (60) freizugeben, um die elektrische Versorgung von der Energieversorgung zu der Vorrichtung zu ermöglichen, um die Vorrichtung nur dann zu aktivieren, wenn das Farbband (6/6a) in der ersten Kassette (2/2a) mit dem Korrekturband (12/12a) in der zweiten Kassette (10/10a) kompatibel ist.
10. System nach Anspruch 9, wobei die erste (2/2a) und die zweite (10/10a) Kassette durch einen Trägerabschnitt (18) an der Vorrichtung getragen werden, wobei der Trägerabschnitt den Schalter (60) umfaßt.
11. System nach einem der vorhergehenden Ansprüche, wobei die Vorrichtung eine Schreibmaschine ist.
12. Verfahren zum Zusammenbau eines Systems, das eine Vorrichtung und mindestens eine Anordnung zur selektiven Kombinierung der ersten und zweiten Kassette, die zum Einsetzen in die Vorrichtung geeignet ist, umfaßt, wobei das Verfahren folgende Verfahrensschritte aufweist: Bereitstellen der ersten Kassette mit einem Farbband; Bereitstellen der zweiten Kassette mit einem Korrekturband; Einsetzen der ersten und der zweiten Kassette in die Vorrichtung; dadurch gekennzeichnet, daß weiterhin der Verfahrensschritt des Bereitstellens der Kassettenskompatibilitätseinrichtung vorgesehen ist, wobei die Kompatibilitätseinrichtung an der ersten und der zweiten Kassette an den anordnungsspezifischen Stellen vorgesehen ist, und zwar entsprechend dem Typ des Bands der ersten Kassette und dem Typ des Korrekturbands in der zweiten Kassette, zur Verhinderung, daß nicht kompatible Farbband- und Korrekturbandkombinationen entsprechend in die Vorrichtung eingesetzt werden.
13. Verfahren nach Anspruch 12, daß weiterhin den Verfahrensschritt der Bildung der Vorrichtung mit einem Schalter (60) umfaßt, der so betrieben werden kann, die Vorrichtung zu aktivieren, und wobei der Verfahrensschritt der Bereitstellung der Kompatibilitätseinrichtung (8, 16/44, 46) an den Kassetten (2, 10/2a, 10a) die Bereitstellung der Kompatibilitätseinrichtung (8, 16/44, 46) um-

faßt, die dazu geeignet ist, beim Einsetzen der ersten (2/2a) und der zweiten (10/10a) Kassette in die Vorrichtung den Betrieb des Schalters (60) freizugeben, um die Vorrichtung zu aktivieren, falls das Farbband (6/6a) der ersten Kassette (2/2a) mit dem Korrekturband (12/12a) der zweiten Kassette (10/10a) kompatibel ist.

14. Verfahren nach Anspruch 12 oder 13, wobei der Verfahrensschritt der Bereitstellung der Kompatibilitätseinrichtung (8, 16/44, 46) an den Kassetten (2, 10/2a, 10a) die Bereitstellung einer Lasche (8/44) an der ersten Kassette (2/2a) umfaßt.
15. Verfahren nach Anspruch 12, 13 oder 14, wobei der Verfahrensschritt der Bereitstellung der Kompatibilitätseinrichtung (8, 16/44, 46) an den Kassetten (2, 10/2a, 10a) die Bereitstellung einer Öffnung (16/46) an der zweiten Kassette (10/10a) umfaßt.
16. Verfahren gemäß einem der Ansprüche 12 bis 15, wobei der Verfahrensschritt der Bereitstellung der ersten Kassette (2/2a) mit einem Farbband (6/6a) die Bereitstellung der ersten Kassette (2) mit einem Carbonband (6) vom Single-Strike-Typ umfaßt und der Verfahrensschritt der Bereitstellung der zweiten Kassette (10/10a) mit einem Korrekturband (12/12a) die Bereitstellung der zweiten Kassette (10) mit einem Korrekturband (12) vom Abhebtyp umfaßt.
17. Verfahren gemäß einem der Ansprüche 12 bis 15, wobei der Verfahrensschritt der Bereitstellung der ersten Kassette (2/2a) mit einem Farbband (6/6a) die Bereitstellung der ersten Kassette (2a) mit einem Carbonband (6a) vom Multi-Strike-Typ umfaßt und der Verfahrensschritt der Bereitstellung der zweiten Kassette (10/10a) mit einem Korrekturband (12/12a) die Bereitstellung der zweiten Kassette (10a) mit einem Korrekturband (12a) vom Abhebtyp umfaßt.

Revendications

1. Système utilisant un ensemble de cassettes qui comprend une première et une seconde cassettes pouvant être combinées sélectivement, ledit système comprenant, en combinaison :
un dispositif dans lequel un ensemble d'une première cassette (2/2a) ou d'une deuxième cassette (10/10a) est inséré pour travailler dans le dispositif ;
une première cassette (2/2a) destinée à être utilisée dans ledit dispositif, ladite première cassette ayant un ruban encré (6/6a) ; et
une deuxième cassette (10/10a) destinée



à être utilisée dans ledit dispositif, ladite deuxième cassette ayant un ruban correcteur (12/12a) ;

caractérisé en ce qu'il est en outre prévu des moyens de compatibilité qui comprennent :

une première caractéristique de structure (8/44) prévue sur ladite première cassette (2/2a) en un endroit qui correspond au type de ruban encre (6/6a) contenu dans ladite première cassette ;

une deuxième caractéristique de structure (16/46) prévue sur ladite deuxième cassette (10/10a) en un endroit qui correspond au type de ruban correcteur (12/12a) contenu dans ladite deuxième cassette ;

lesdites première (8/44) et deuxième (16/46) caractéristiques de structure étant adaptées pour inhiber le montage correct desdites première et deuxième cassettes dans le dispositif sauf si le ruban encre contenu dans la première cassette est compatible avec le ruban correcteur contenu dans la deuxième cassette.

2. Système selon la revendication 1, dans lequel ladite première cassette (2/2a) comprend un boîtier (4/4a), ladite première caractéristique de structure (8/44) étant située sur le boîtier (4/4a) de manière à pendre de celui-ci.
3. Système selon la revendication 1 ou 2, dans lequel la première cassette (2) dudit ensemble de cassettes contient un ruban carbone du type monorappe (6) et ladite deuxième cassette (10) contient un ruban correcteur du type à arrachement (12).
4. Système selon la revendication 1 ou 2, dans lequel ladite première cassette (2a) dudit ensemble de cassettes contient un ruban carbone du type multifrappe (6a) et ladite deuxième cassette (10a) contient un ruban correcteur du type à recouvrement (12a).
5. Système selon la revendication 3 ou 4, dans lequel lesdits moyens de compatibilité comprennent le fait que ladite première cassette (2/2a) possède une formation patte pendante (8/44) et ladite deuxième cassette (10/10a) possède une formation ouverture (16/46), ladite formation patte (8/44) s'engageant dans ladite formation ouverture (16/46).
6. Système selon une quelconque des revendications précédentes, dans lequel les moyens de compatibilité comprennent le fait que ladite première cassette (2/2a) possède sur elle une patte (8/44), qui peut être située sur l'une d'au moins deux parties de ladite première cassette (2/2a), ladite situation dépendant du type particulier de

ruban encre (6/6a) contenu dans la première cassette (2/2a), et

que ladite deuxième cassette (10/10a) présente une ouverture (16/46) qui peut être située dans l'une ou l'autre de deux parties de ladite cassette (10/10a), ladite situation dépendant du type particulier de ruban correcteur (12/12a) contenu dans la deuxième cassette (10/10a), et dans lequel la situation de la patte (8/44) de la première cassette et la situation de l'ouverture (16/46) de la deuxième cassette sont en alignement pour permettre à la patte (8/44) de la première cassette de traverser l'ouverture (16/46) de la deuxième cassette uniquement si le type particulier de ruban encre (6/6a) contenu dans ladite première cassette (2/2a) est fonctionnellement compatible avec le type particulier de ruban correcteur (12/12a) contenu dans la deuxième cassette (10/10a).

7. Système selon la revendication 5 ou 6, dans la patte (8/44) se trouve sur le côté droit de la première cassette (2/2a) et dans lequel l'ouverture (16/46) de la deuxième cassette (10/10a) se trouve sur le côté droit de la deuxième cassette (10/10a).
8. Système selon la revendication 5 ou 6, où la patte (8/44) se trouve sur le côté gauche de la première cassette (2/2a) et dans lequel l'ouverture (16/46) de la deuxième cassette (10/10a) se trouve sur le côté gauche de la deuxième cassette (10/10a).
9. Système selon une quelconque des revendications précédentes, et comprenant en outre un interrupteur (60) monté sur ledit dispositif et connecté à une source d'alimentation pour commander l'amenée de l'électricité audit dispositif ; dans lequel les moyens de compatibilité (8, 16/44, 46) sont adaptés pour autoriser la manœuvre de l'interrupteur (60) pour permettre l'amenée de l'électricité de la source d'alimentation audit dispositif pour activer ledit dispositif uniquement lorsque le ruban encre (6/6a) de la première cassette (2/2a) est compatible avec le ruban correcteur (12/12a) de la deuxième cassette (10/10a).
10. Système selon la revendication 9, dans lequel les première (2/2a) et deuxième (10/10a) cassettes sont portées par une section ferrure (18) dudit dispositif, ladite section ferrure comprenant ledit interrupteur (60).
11. Système selon une quelconque des revendications précédentes, dans lequel le dispositif est une machine à écrire.



12. Procédé pour assembler un système comprenant un dispositif et au moins un ensemble de première (2/2a) et deuxième (10/10a) cassettes pouvant être combinées sélectivement, qui est adapté pour être inséré dans le dispositif, le procédé comprenant les phases consistants à :

équiper la première cassette (2/2a) d'un ruban encre (6/6a) ;

équiper la deuxième cassette (10/10a) d'un ruban correcteur (12/12a) ; et

insérer les première (2/2a) et deuxième (10/10a) cassettes dans le dispositif ;

caractérisé en ce qu'il comporte encore la phase consistant à prévoir sur lesdites cassettes (2, 10/2a, 10a) des moyens de compatibilité (8, 16/44, 46), lesdits moyens de compatibilité (8, 16/44, 46) étant disposés sur lesdites première (2/2a) et deuxième (10/10a) cassettes dans des endroits spécifiques à l'ensemble, qui correspondent au type de ruban (6/6a) contenu dans ladite première cassette (2/2a) et au type de ruban correcteur (12/12a) contenu dans la deuxième cassette (10/10a) pour empêcher les cassettes ayant des combinaisons incompatibles de ruban encre et de ruban correcteur d'être correctement placées dans ledit dispositif.

13. Procédé selon la revendication 12, comprenant en outre la phase consistant à équiper le dispositif d'un interrupteur (60) pouvant être manoeuvré pour activer le dispositif, et

dans lequel la phase consistant à prévoir lesdits moyens de compatibilité (8, 16/44, 46) sur lesdites cassettes (2, 10/2a, 10a) consiste à prévoir des moyens de compatibilité (8, 16/44, 46) adaptés pour autoriser, à la suite de l'insertion des première (2/2a) et deuxième (10/10a) cassettes dans le dispositif, la manoeuvre dudit interrupteur (60) pour activer le dispositif si le ruban encre (6/6a) de la première cassette (2/2a) est compatible avec le ruban correcteur (12/12a) de la deuxième cassette (10/10a).

14. Procédé selon la revendication 12 ou 13, dans lequel la phase consistant à prévoir des moyens de compatibilité (8, 16/44, 46) sur lesdites cassettes (2, 10/2a, 10a) consiste à prévoir une patte (8/44) sur ladite première cassette (2/2a).

15. Procédé selon la revendication 12, 13 ou 14, dans lequel la phase consistant à prévoir des moyens de compatibilité (8, 16/44, 46) sur lesdites cassettes (2, 10/2a, 10a) consiste à prévoir une ouverture (16/46) sur ladite deuxième cassette (10/10a).

16. Procédé selon une quelconque des revendications 12 à 15, dans lequel la phase consistant à

équiper la première cassette (2/2a) d'un ruban encre (6/6a) consiste à munir la première cassette (2) d'un ruban carbone du type monofrappe (6) et la phase consistant à munir la deuxième cassette (10/10a) d'un ruban correcteur (12/12a) consiste à munir la deuxième cassette (10) d'un ruban correcteur du type à arrachement (12).

17. Procédé selon une quelconque des revendications 12 à 15, dans lequel la phase consistant à munir la première cassette (2/2a) d'un ruban encre (6/6a) consiste à munir la première cassette (2a) d'un ruban du type carbone multifrappe (6a) et la phase consistant à munir la deuxième cassette (10/10a) d'un ruban correcteur (12/12a) consiste à munir la deuxième cassette (10a) d'un ruban correcteur du type à recouvrement (12a).

