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CARBON RIBBON SUPPLY PACKAGE

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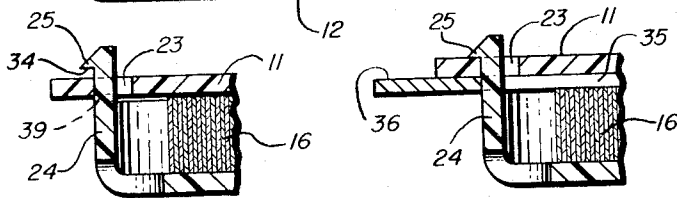
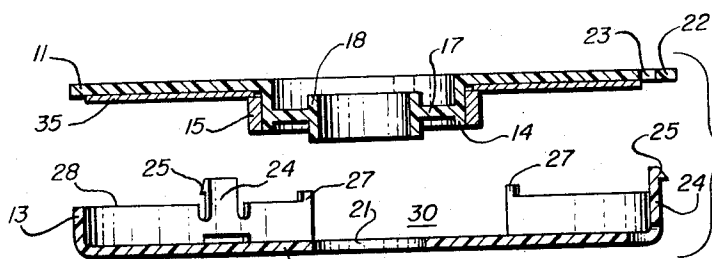
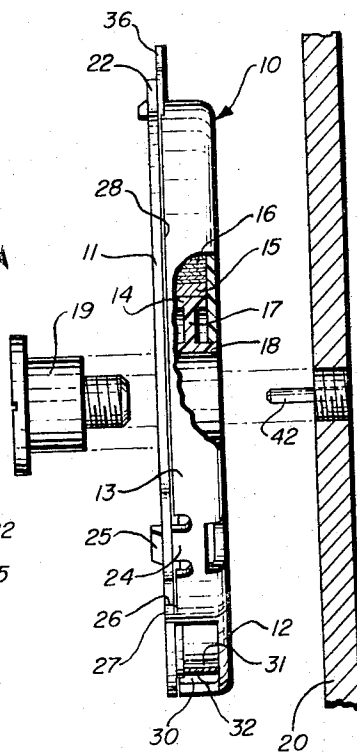
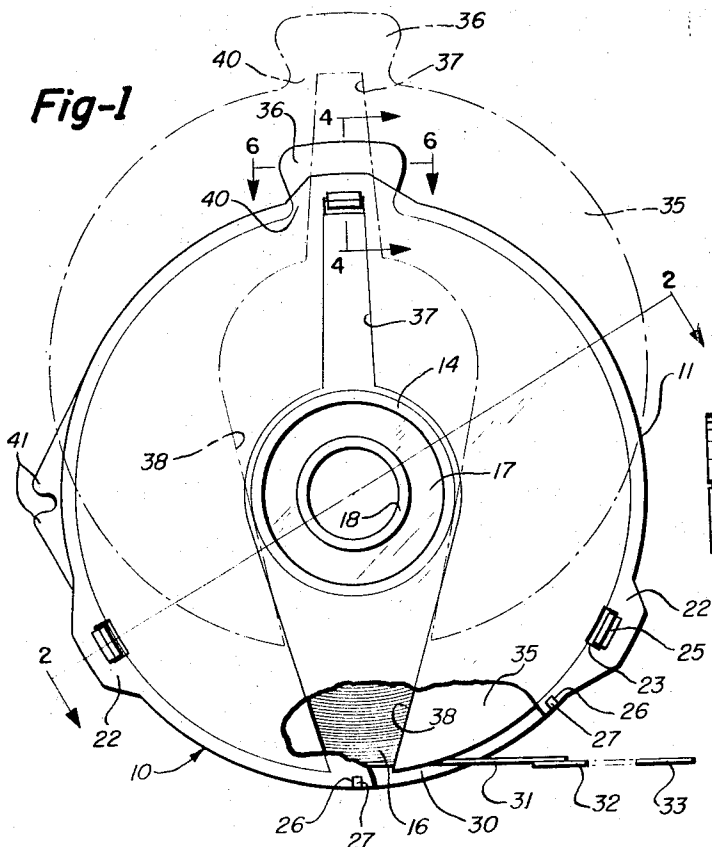


Fig-4

Fig-5

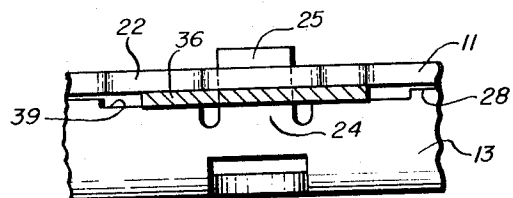


Fig-6

Fig-2

Fig-3

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CARBON RIBBON SUPPLY PACKAGE

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6 Claims. (Cl. 206—52)

This invention relates to a carbon ribbon supply package; more particularly it relates to a carbon ribbon supply package constructed to house a core wound carbon ribbon for shipment and for functional operation in a typewriter; and specifically it relates to a package for enclosing a core-wound carbon ribbon characterized by an integrally formed flange, mounting support and a bearing support for the ribbon core.

Heretofore core wound carbon ribbons were shipped and stored in boxes from which the ribbons were removed, assembled together with flanges or their equivalent provided with the typewriter, and operatively mounted on a bearing stud secured to the typewriter. The carbon ribbon was then threaded through the ribbon vibrator at the printing point of the machine and secured to a take up reel. These core wound ribbons were subject to "treeing" during handling, that is the wound ribbon coils had a tendency to move perpendicular to a radial plane and assume a conical shape which would impair freedom of rotation when mounted between stationary guide flanges. Further, the outer loops of the coiled ribbon had a tendency to fall off during mounting when a lead portion was drawn off to thread the ribbon in the typewriter. And further an operator's hands were subject to being soiled while the lead portion of the ribbon was being threaded.

In accordance with the present invention, the disadvantages of the prior art are overcome in the provision of a core wound ribbon which is mounted on the hollow cylindrical hub integrally formed with a first or outer guide flange, after which a cup shaped cover which may serve as the inner guide flange is suitably peripherally joined to the first flange thereby to enclose the entire ribbon; the cup shaped cover being provided with an exit for the carbon ribbon when the whole is operatively mounted in the machine. Inasmuch as the thickness in an axial direction of the core wound ribbon is less than the axial length of the bearing hub on the guide flange to permit freedom of rotation, the core may shift axially back and forth within the container during shipment and handling with consequent treeing of the ribbon which would impair its free rotation when mounted. Accordingly, a feature of the invention is in the provision of an opening in the cup shaped cover to permit the easy insertion and withdrawal of a novel spacer adjacent the outer guide flange to prevent axial movement of the wound ribbon relative to its core during shipment.

A further feature of the invention is in the provision of a non-inked leader which is removably attached as by adhesive to the lead section of the carbon ribbon whereby upon removal of the spacer and after the assembly is mounted on the machine the non-inked leader may be threaded through the machine and secured to a take-up reel.

Accordingly, an object of the invention is to provide a package for a carbon ribbon which serves as a packaging and shipping container and also as a functional container for the ribbon while in the machine.

Another object of the invention is in the provision of a carbon ribbon package which facilitates installation while preventing the unravelling of the ribbon during installation and operation.

Still another object of the invention is in the provision

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of a carbon ribbon package which permits clean change and threading of the carbon ribbon.

Still another object of the invention is in the provision of a carbon ribbon package which maintains the core wound ribbon cylindrical during shipping and handling prior to installation on a typewriter.

A further object of the invention is to provide a functional carbon ribbon guide and housing which improves feed and tracking of a carbon ribbon.

Other objects and many of the attendant advantages of this invention will be readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings in which like reference numerals designate like parts throughout the figures thereof and wherein:

FIGURE 1 is an elevational view of a carbon ribbon housed by the novel structure of the invention showing the anti-treeing spacer;

FIGURE 2 is an assembled view of the carbon ribbon package in association with mounting elements provided with the typewriter;

FIGURE 3 is an exploded cross sectional view taken along lines 2—2 of FIGURE 1;

FIGURE 4 is an enlarged sectional view taken along lines 4—4 of FIGURE 1 showing the container fastening structure with the spacer removed;

FIGURE 5 is a view similar to FIGURE 4 with the spacer mounted; and

FIGURE 6 is partial cross sectional view taken along lines 6—6 of FIGURE 1.

Referring now to the drawings wherein like reference numerals designate like or corresponding elements throughout the several views there is shown in FIGURES 1 and 2 a core wound carbon ribbon container generally designated by reference numeral 10 comprising an outer flange 11 and a cup shaped cover comprising an outer flange 12 and an annular portion 13 facing the flange 11 and adapted to maintain the flanges 11 and 12 spaced to accommodate a core wound ribbon. As viewed in FIGURE 2 the central portion of the flange 11 is open and formed with an inturned annulus or sleeve 14 coaxial with the flange whose periphery serves as the bearing hub for the core 15 of a carbon ribbon 16 wound thereon. The inner periphery of the annulus is joined as by a web 17 to an inner cylindrical sleeve 18 which is adapted to be mounted on a post in the form of a shouldered screw 19 adapted to be threaded into the right side of the machine frame 20 with the flange 11 outermost as viewed in FIGURE 2. As viewed in FIGURE 3 the axial length of sleeve 18 is such that it is recessed from the plane of flange 11 to accommodate the head of screw 19 and extends beyond the inturned edge of annulus 14 whereby it may fit within a circular centrally located hole 21 in cover flange 12.

Referring again to FIGURE 1 the flange 11 is provided with equi-spaced peripheral projections 22 provided with slots 23 adapted to receive associated cooperating detents 24 so formed on the annular portion 13 of the cup shaped cover, as viewed in FIGURES 2 and 6, as to be capable of flexure whereby the outwardly hooked ends 25 thereof will detent the cover and flange 11. Further as viewed in FIGURE 1 the peripheral edge of the flange 11 is provided with a pair of spaced cutouts 26 adapted to receive locator projections 27 formed on and extending beyond the edge 28 of the annular portion 13 of the cup shaped cover; the annular portion of the cover between said locator projections being cut away thereby defining an exit 30 for the ribbon 16 whose lead end 31 is secured as viewed in FIGURE 1 to a non-inked leader 32 as by adhesive tape or the like and the latter itself being pro-

vided on its lead end 33 with adhesive to secure it to the unlinked periphery of the wound ribbon or to itself, depending on its length, to prevent unravelling during assembly and storage.

Referring to FIGURE 4 the detent projections 24 are made of sufficient length so that the underside 34 of the hooked ends 25 permit relative movement between the cover and flange 11 to permit withdrawal of a spacer generally designated by reference numeral 35 which is adapted to be placed over the mounted wound ribbon prior to assembly of the cover to correct for any treeing or, after assembly of the cover, to be inserted between edge 28 of the annulus 13 and the guide flange 11 thereby to hold the wound ribbon 16 secure against axial movement within the assembly. As viewed in FIGURE 1 the spacer 35 is generally circular and may be imprinted on one side so as to be visible through the transparent guide flange 11 formed from suitable plastic as is the cover and the ribbon core 15 in a preferred embodiment. The spacer 35 is provided with a finger tab 36 extending from an edge thereof and is formed with a cut away 37 comprising a first straight slot extending from within the tab area toward the center of the spacer, and a second coextensive arcuate cut away 38 which encompasses said sleeve 14 and diverges toward and opens to the edge opposite said finger tab 36.

As viewed in FIGURE 6 the cover annulus 13 is cut away as at 39 to provide an opening to accommodate the finger tab 36 of the inserted spacer which is generally slightly thicker than the play (FIGURE 4) between the undersurface 34 of the detents 24 and flange 11; the plastic having sufficient flexure to permit withdrawal of the spacer 35. The additional thickness of the inserted spacer 35 as viewed in FIGURE 5 holds the carbon ribbon 16 secured against axial movement. By grasping the finger tab 36 and pulling, the diverging arcuate portion of the slot is cammed open by the sleeve 14 as the spacer 35 is withdrawn; the portions 40 of the spacer adjacent the root of the cut away 37 within the finger tab 36 being sufficiently flexible to permit the opening of the composite slot and withdrawal of the spacer prior to mounting on the machine. As viewed in FIGURE 1 the cup shaped cover may be provided with projections 41 defining a slot to receive a locating pin 42 extending from the frame and adapted to hold the package stationary relative to the machine frame where the shouldered screw 19 is loosely received within sleeve 18.

Alternatively where it is desired to dispense with the cup shaped cover and utilize the machine frame as an inner guide flange, the cup shaped cover may be removed prior to mounting the carbon ribbon and the hubbed flange may be mounted on a spindle and clamped between a headed screw and the machine frame.

It should be understood that the foregoing disclosure relates to only a preferred embodiment of the invention and that it is intended to cover all changes and modifications of the example of the invention herein chosen for the purposes of the disclosure which do not constitute departures from the spirit and scope of the invention.

The invention claimed is:

1. In combination:

a hollow ribbon core on which a carbon ribbon is wound,

and a package and mounting container for said core wound ribbon adapted to be non-rotatively mounted on a typewriter frame, said container comprising a pair of ribbon guide flanges,

a coaxial sleeve formed upon one of said ribbon guide flanges extending toward the other of said guide flanges, the outer diameter of said sleeve being dimensioned to accommodate the inner diameter of and rotatably support said ribbon core, and the inner diameter of said sleeve being dimensioned to accommodate the outer diameter of a support post secured to said typewriter frame,

and annular means formed with one of said flanges peripherally fixedly joining said flanges in spaced parallel relation to enclose said core wound ribbon and permit its rotation relative to said sleeve, said annular means having a section cut away to provide an exit for said carbon ribbon.

2. In combination:

a hollow ribbon core on which a ribbon is wound, and a combined package and mounting container for said core wound ribbon adapted to be non-rotatively secured to a typewriter frame, said container comprising a pair of ribbon guide flanges, one of said flanges having a coaxially formed sleeve extending toward the other of said flanges dimensioned to rotatably support said ribbon core and to be supported by a typewriter frame supported post extending thereinto,

annular means peripherally fixedly securing said ribbon guide flanges in spaced parallel relation so that the axial spacing between said flanges is greater than the width of said ribbon,

and a removable spacer disposed between one side of said core wound ribbon and one of said guide flanges to prevent axial movement of said core wound ribbon between said flanges during shipping and storage, said annular means having cut out sections to permit removal of said spacer and to provide an exit for said ribbon respectively.

3. A shipping and functional ribbon supply package containing a hollow core on which a carbon ribbon is wound comprising a first ribbon guide flange formed with a first annular coaxially disposed sleeve extending to one side of said flange adapted to be received within and to rotatably support said core,

a second annular sleeve concentrically supported by and within said first sleeve, said second sleeve being axially offset relative to and extending beyond said first sleeve in the direction of said first sleeve,

a second flange having a central opening adapted to receive the axially offset portion of said second sleeve extending beyond said first sleeve, said second flange having a peripheral annulus adapted to extend toward said first flange when said second sleeve is placed within said central opening,

and complementary detent means on said annulus and said first guide flange to fixedly secure said first and second flanges in spaced parallel relationship after mounting the core wound ribbon on said first sleeve, said annulus having a cut away portion to provide an exit for said carbon ribbon, said ribbon package being adapted to be non-rotatively secured relative to a typewriter frame when its inner sleeve is mounted on and supported by a post secured to said frame.

4. A shipping and functional ribbon supply package containing a hollow core on which a carbon ribbon is wound comprising a first ribbon guide flange formed with a first annular coaxially disposed sleeve extending to one side of said flange adapted to be received within and to rotatably support said core, a second annular sleeve concentrically supported by and within said first sleeve, said second sleeve being axially offset relative to and extending beyond said first sleeve in the direction of said first sleeve,

a second flange having a central opening adapted to receive the axially offset portion of said second sleeve extending beyond said first sleeve, said second flange having a peripheral annulus adapted to extend toward said first flange when said second sleeve is placed within said central opening,

complementary detent means on said annulus and said first guide flange to fixedly secure said first and second flanges against rotation and in spaced parallel relationship after mounting the core wound ribbon on said first sleeve, said annulus having a cut away portion to provide an exit for said carbon ribbon, said

detent means permitting axial play between said first and second guide flanges, and a removable spacer element disposed between said mounted carbon ribbon and said first guide flange to take up said play and to hold said wound carbon ribbon against axial movement within said package during shipping and storage, said annulus having a cut out portion to permit removal of said spacer element, said package being adapted to be non-rotatively secured to a typewriter frame when said second sleeve is mounted on and supported by a post secured to said frame.

5. A carbon ribbon supply package as recited in claim 4 wherein said first guide flange is transparent and wherein said spacer element is circular and imprinted on one side so as to be visible through said first guide flange, a finger tab extending from an edge portion thereof through said cut out portion, a first cut away forming a slot extending from within said tab area toward the center of said spacer, and a second cut away coextensive with said first cut

away forming an arcuate slot encompassing said first sleeve and diverging toward the periphery of said spacer opposite said finger tab.

6. A shipping and functional carbon ribbon supply package as recited in claim 4 wherein said ribbon is provided with a non-inked leader adhesively secured to said inked portion whereby an operator may thread said non-inked leader through the typewriter and secure it to a take up reel.

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