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Crone

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[54] **PAPER ROLL SUPPORT FOR TYPEWRITERS**

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[52] **U.S. Cl.** ..... **197/133 R**

[51] **Int. Cl.** **B41j 15/00**

[58] **Field of Search** ..... 197/133 R, 180

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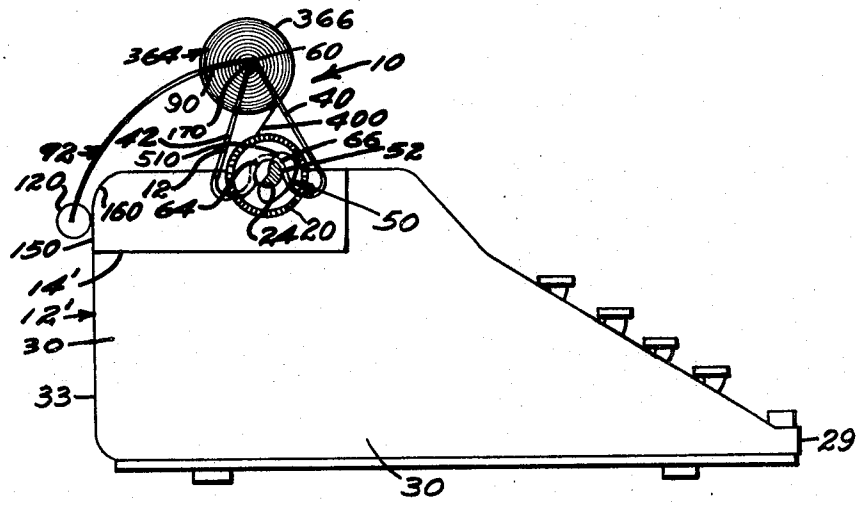
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[57] **ABSTRACT**

A paper roll support for attachment to a typewriter having saddle means for engaging horizontal shafts on the right and left hand sides of a typewriter for forming a part of the support, another part of the support being a means for engaging the upright surface of the backside of the carriage of a typewriter.

7 Claims, 3 Drawing Figures



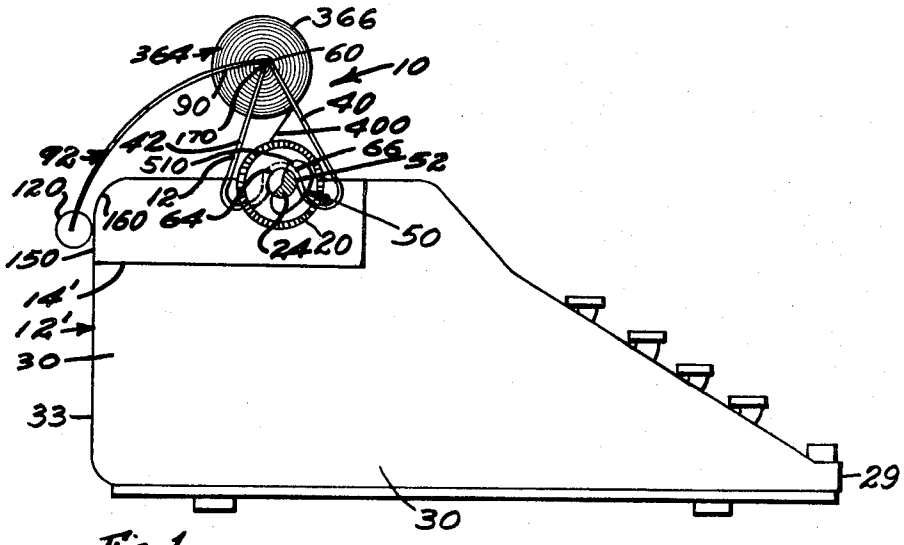


Fig. 1

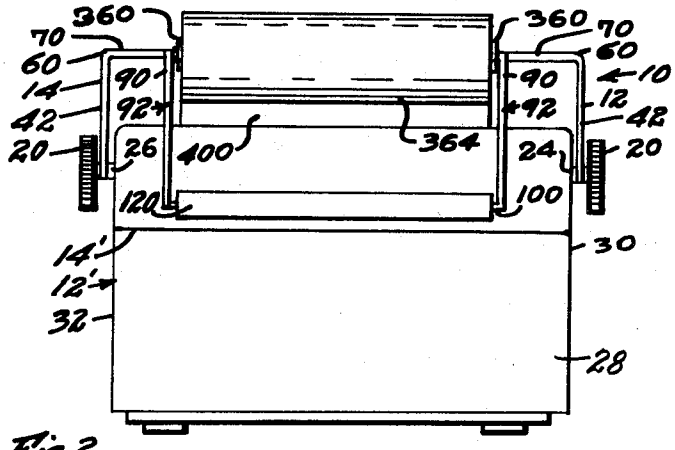


Fig. 2

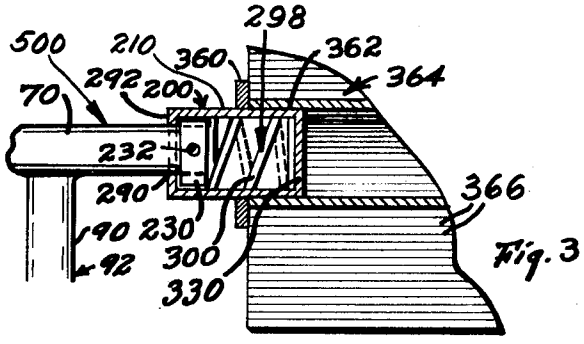


Fig. 3

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PAPER ROLL SUPPORT FOR TYPEWRITERS

This invention is a substitute for application Ser. No. 797,651 filed Feb. 7, 1969, now abandoned.

FIELD OF THE INVENTION

This invention1 is in the field of paper roll supports for typewriters for supporting a roll of paper on the carriage of a typewriter so that the paper from the roll can continuously feed through the typewriter.

DESCRIPTION OF THE PRIOR ART

Prior art paper roll supports have been of two types: a first type which is mounted on the typewriter by screws; and a second type which mounts on a typewriter by engaging exposed portions of the typewriter.

The first type has the disadvantage that a typewriter must be drilled for an insertion of metal screws and the resulting holes tend to reduce the value of the typewriter for resale purposes to persons who do not have a use for a specialized paper roll support. An additional disadvantage of the first type is the need for tools and time and labor in mounting a paper roll support.

There has long been a need for a paper roll support which is readily attachable and detachable without defacing a typewriter and one which will fit many different kinds of typewriters.

Moreover, most typewriters have but a single shaft which can be engaged by a foot support portion of a paper roll support, and so for most typewriters, there has been no way to make use of the concept of having a forward and a rearward fork or shuttle engaging a forward and a rearward shaft portion on the right and on the left hand sides of the typewriter respectively.

SUMMARY OF THE INVENTION

A paper roll support for a typewriter is provided which basically engages right and left shaft portions to provide the forwardmost typewriter engaging points of the support, but which has a U-shaped back-engaging means having a lower portion and side portions, and having a lower part of the back-engaging means disposed and spaced rearwardly from shaft-engaging saddles on a forward lower part of the paper roll support so that the paper roll support has a stability because the back-engaging portion engages an upright surface of a backside of the carriage of the typewriter.

The paper roll support is further provided with retractable means for carrying the paper roll comprising spring means for urging it into the paper roll and allowing its retraction so as to free a paper roll for discard and to permit replacement.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a side elevation of a typewriter with the paper roll support of this invention mounted thereon and partially showing the dotted line, a part of the typewriter knob being broken away for showing a part of a saddle therebeneath.

FIG. 2 is a rear elevation of the typewriter of FIG. 1 with the paper roll support mounted thereon.

FIG. 3 is a detail showing a frontal elevation of a paper roll and retractable paper roll carrying assembly of the invention, with the forward half of the paper roll and assembly being broken away and the remainder showing in section.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The paper roll support of this invention is generally indicated at **10** and is shown as mounted on a typewriter **12'** having a carriage **14'** which is adapted to shift from side to side.

The typewriter **12'** is of a conventional type having right and left knobs **20**, each of which is mounted on left and right horizontal shaft means **24** and **26** for rotating the latter in a conventional manner. The typewriter **12'** has a base **28** having a forward side **29**, left and right hand sides **30** and **32**, and a rearward side **33** having the upright rearward wall **150**.

Each saddle **50** can be said to have an upper portion **510**, best seen in FIG. **1**, for extending across the upper side of a respective shaft means **24, 26.**

The bumper **120** can also be called a back-engaging means and is disposed at a substantial spacing rearwardly from a line between the right and left saddles **50** so that the back-engaging means can engage the back of typewriter carriage **14'** while the saddles **50** are in position on the shaft means **24, 26** at each side of the carriage **14'**.

It will be seen that each sleeve or cylinder **210** provides a roll-receiving cylindrical outer surface which is disposed in alignment with the opposite sleeve or cylinder **210** whereby they are aligned well for receiving a paper roll **364.**

The paper roll support **10** has two spaced upstanding gripping arms **12** and **14** disposed at the left and right hand sides **30, 32** of the typewriter **12'** respectively as the typewriter **12'** would be viewed by a typist from its forward side. Each gripping arm **12** or **14** has a forward portion **40** and a rearward portion **42** which are upstanding and which are inclinedly disposed with respect to each other. The forward and rearward portions **40** and **42** converge toward an apex **60** at their upper ends, but are spaced apart considerably at their lower ends, and a shaft-engaging saddle **50** is disposed between and connects the lower ends of the forward and rearward portions **40** and **42** which are on each side of the typewriter **12'** respectively, each saddle **50** having a downwardly facing shaft receiving saddle recess **52** for snugly receiving the upper side of the respective shaft means **24** or **26.**

Each forward and rearward portion **40** and **42** and the respective saddle **50** on each side **30** and **32** of the typewriter **12'** are preferably integrally formed of the same piece of wire which latter is resilient and springy and has sufficient springiness so that the rearward and forward portions of a saddle **50**, see at **64** and **66**, which are on opposite sides of the shaft receiving saddle recess **52**, are adapted to spring apart somewhat because of their position as they pass downwardly over the respective shaft means **24** and **26.** Each saddle **50** has a rearward portion **64** and a forward portion **66** as seen in FIG. **1.** The spacing of the portions **64** and **66** is greater on the intermediate part of the recess **52** which is located opposite diametrically opposed parts of the shaft means **24**, Flg. **1**, than is the spacing of the rearward and forward saddle portions **64** and **66** at points on the saddle **50** which are immediately below the diametrically opposed parts of the shaft means **24** which are intermediate between the inner end of the shaft means **24** and the outer end of the shaft means **24** as defined by the relationship of the shaft means **24** with

respect to the recess 52. This allows the spring wire, of which the forward and rearward portions 40 and 42 is made, to grip slightly under the forward and rearward parts of the shaft means 24 which are of the greatest horizontal spacing with respect to each other as seen in FIG. 1.

Each gripping arm 12 and 14 is provided with an inwardly extending horizontal portion 70 at its upper end and to a rearward side of which the upper forward ends 90 of the downwardly exTending sides 92 are arched, concave on their undersides, so that the bumper 120 is a substantial distance downwardly from the top of the backside of the type-writer carriage 14' without the sides 92 touching the typewriter carriage 14'. Portion 100 is attached to and integral with the sides 92, the portion 100 extending horizontally and having disposed around it resilient bumper 120 of cylindrical shape, the bumper 120 being for engaging the upright rearward wall 150 of the carriage 14'. The side portions 92 incline upwardly and forwardly from their lower ends to their upper forward ends 90 and are preferably concave on their undersides for the better clearing of the rearwardmost upper corner 160 of the typewriter carriage 14'.

The inwardly extending portions 70 are each integral with and attached to one of the forward or rearward arm portions 40 or 42 of the respective gripping arm 12 or 14 on each side of the typewriter 12' and the other arm portion 40 or 42 is suitably welded to the inwardly extending portion 70 at the apex 60, as shown at 170.

On the inner end of each of the inwardly extending portions 70 is a paper roll engaging assembly 200 having a sleeve or cylinder 210 slidably disposed on the respective inwardly extending portion 70 and which is prevented from escaping therefrom by a collar 230 in each sleeve or cylinder 210 and slidably receiving the cylindrical inner side of the sleeve or cylinder 210 thereon, each collar 230 being attached by a set screw 232 to the innermost end of the inwardly extending portion 70.

The inwardly extending portion 70 extends slidably through an opening 290 extending horizontally through an end wall 292 on the outer end of the respective sleeve or cylinder 210. A compression spring 300 engages the collar 230 and presses against an end wall 330 of sleeve or cylinder 210, the end wall 330 extending vertically across and interconnecting opposite sides of the inner end of sleeve or cylinder 210. On the outer side of each sleeve or cylinder 210 a surrounding flange 360 is attached thereto rigidly for engaging the innermost tube 362 of a paper roll 364 having paper layers 366 wrapped around the tube 362.

In operation, it will be seen that with the paper roll support 10 removably attached to the typewriter 12' as described and shown, a paper roll 364 can be inserted between the flanges 360 on the right and left hand sides 32 and 30 of the typewriter 12' by causing the sleeve or cylinders 210 to be pulled outwardly on the respective inwardly extending portions 70 until the central tube 362 of the paper roll 364 can be placed therebetween.

By a reversal of this process, the paper roll 364 can be easily removed and replaced at any time whereby paper from the paper roll 364 is shown at 400 continuously unrolling down into the typewriter 12' as used.

The respective right and left inwardly extending portions 70, and all above described parts mounted thereon exclusive of the paper roll 364 itself can be referred to as a right and left roll axle means each generally indicated at 500. As thus described, each roll axle means 500 can comprise a horizontally extending member or inwardly extending portion 70 attached to the upper end of a respective gripping arm 12 or 14, a retractable sleeve or cylinder 210 of a respective paper roll engaging assembly 200 movable back and forth lengthwise of the horizontally extending means or inwardly extending horizontal portion 70, urging means generally indicated at 298 including the spring 300 mounted in the sleeve or cylinder 210 of the paper roll engaging assembly 200, the urging means 298 further having as one of its parts the inner end wall 330 of each cylinder or sleeve 210 which bears against the respective inner end of the spring 300 for urging the sleeve or cylinder 210 inwardly for engagement in the paper roll 364.

The sleeves or cylinders 210 are manually retractable by compressing the springs 300 for moving the springs 300 outwardly to release the paper roll 364 for replacement.

Each arm 12 and 14 has forward and rearward portions 40 and 42 which are upstanding and which are joined together at their lower ends by shaft engaging saddles 50. The arms 12 and 14 and their saddles 50 are formed of resilient wire and the saddles 50 each have forward and rearward portions 66 and 64 which latter are disposed on the forward and rearward sides respectively of each saddle recess 52, earlier described, so that when the forward and rearward portions 66 and 64 of each saddle 50 receive a shaft means 24, 26 of sufficient diameter therebetween, then the forward and rearward portions 66, 64 are adapted to spring apart somewhat as the saddle 50 is pushed downwardly onto a shaft section.

The forward and rearward portions 66 and 64 of each saddle 50 are adapted by their shape and resiliency to grip the underside of the forward and rearward sides of a respective one of the shaft means 24, 26 respectively.

The back-engaging means includes bumper, and also includes elongated right and left side portions 92 attached at their lower ends to the bumper and extending upwardly from the bumper and connected respectively to the right and left arms 14 and 12 by means actually of a connection to the respective inwardly extending portions 70 which form parts, in a sense, of the attachment of the right and left side portions 92 to the arms 12 and 14. This connection of the upper ends of the right and left side portions 92 tends to prevent the arms 12 and 14 from moving rearwardy, the back-engaging means having a soft surface represented by the bumper 120 forming a cover thereon to prevent abrasion of the typewriter carriage 14'.

It is preferable that each upper portion 510 of each saddle be formed integrally with the respective saddle 50 forward portion 66 for economy of manufacture.

The back-engaging means is entirely disposed a substantial distance rearwardly of the roll axle means 500 respectively, whereby the downward pressure of the weight of a paper roll 364 on the roll axle means 500 on each side will be upheld by the back-engaging means and also by the saddles 50

It is preferable that each arm 12 or 14 and its saddle 50 are entirely formed of the same integral piece of wire for economy, whereby two separate integral pieces of wire are used for the parts described, one for

the left arm **12** and its saddle **50**, and the other for the right arm **14** and its saddle **50.**

I claim:

1. A paper roll support for a typewriter of a type having a base having forward, rearward and right and left sides, a carriage movably mounted on said base for movement from side to side with respect to said base, said carriage having two horizontal shaft means having forward and rearward sides, each shaft means being elongated from right to left and one of said shaft means disposed on the right side and one of said shaft means on the left hand side of and mounted on said carriage, said paper roll support comprising: right and left spaced upstanding arm means disposable on the right and left sides of said carriage, right and left shaft-engaging saddles on the lower ends of said arm means respectively, each saddle having a concave inner surface, each said concave inner surface having an upper portion extending forwardly and rearwardly for engaging the upper side of the respective said shaft means, said saddles each having a forward portion extending downwardly for engaging the forward side of a respective one of said shaft means so as to restrain the respective saddle from moving rearwardly with respect to the respective shaft means, each said saddle having an upper portion for extending across the upper side of a respective one of said shaft means and on which said upper portion of said concave inner surface is formed, a back-engaging means having a back engaging portion disposed at a substantial spacing rearwardly from a line between said right and left saddles so that said back engaging portion can engage the back of said carriage, right and left elongated aligned paper roll axle means for receiving thereon open ends of a paper roll, said roll axle means each being attached to the upper end of a respective adjacent one of said arm means and extending inwardly therefrom, said right roll axle means being spaced from said left roll axle means, said right and left roll axle means each having aligned elongated roll-receiving outer surfaces disposed upwardly of said right and left saddles, said back engaging means having elongated right and left side portions attached thereto and extending upwardly therefrom and connected respectively to said right and left arm means for preventing said arm means from moving rearwardly, said back engaging means having a soft surface covering thereon to prevent abrasion of said carriage.

2. The combination of claim **1** in which said right and left roll axle means each comprise: a horizontally extending member attached to the upper end of a respective one of said arm means, a retractable sleeve defining a part of the respective roll axle means and said sleeve having an outer sleeve surface defining one of said roll-receiving outer surfaces, said sleeve being movable back and forth legnthwise of said horizontally extending member, urging means including a spring and mounted in said sleeve and urging said sleeve inwardly from a respective arm means to engage in a paper roll, said sleeves being manually retractable by compressing said springs for moving said springs outwardly to release said paper roll for replacement.

3. The combination of claim **1** in which said arm means each have forward and rearward portions which are upstanding and which are joined together at their lower ends by said shaft-engaging saddles respectively on the right and left hand sides of the paper roll support, said arm means and saddles being formed of resilient wire and said saddles further having rearward portions spaced from said forward portions, said forward and rearward portions being disposed on forward and rearward sides respectively of a saddle recess so that when said forward and rearward portions receive a shaft means of sufficient diameter therebetween said forward and rearward portions can be sprung apart somewhat as the saddle is pushed downwardly onto a shaft means, said forward and rearward portions thereby resiliently gripping the underside of the forward and rearward sides of a respective one of said shaft means.

4. The combination of claim **1** in which: each said saddle upper portion is formed integrally with the respective said saddle forward portion.

5. The combination of claim **1** in which: said back-engaging means is entirely disposed a substantial distance rearwardly of said roll axle means respectively whereby the downward pressure of the weight of a paper roll on said roll axle means will be upheld by said back-engaging means and also by said saddles.

6. The combination of claim **1** in which: each arm means and respective saddle are formed of a single integral piece of wire.

7. The combination of claim **1** in which said saddles each also have a rearward portion spaced rearwardly from said forward portion, said saddles being resilient and flexible, each saddle having a recess formed by said concave inner surface and having the spacing of said forward and rearward portions lesser at one depth of said recess than at a greater depth of said recess and resiliently gripping the respective shaft means with at least half of the cross-sectional area of the respective shaft means deeper than said one depth of the respective recess.

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