

# UNITED STATES PATENT OFFICE

1,962,082

## TYPEWRITER RIBBON

Samuel Eugene Miller, Aurora, Ill., assignor to  
L. C. Smith & Corona Typewriters, Inc., Syra-  
cuse, N. Y., a corporation of New Jersey

No Drawing. Application March 25, 1932,  
Serial No. 601,109

10 Claims. (Cl. 197—172)

The present invention is directed to the pro-  
vision of what may be termed a supplemental  
ink coating on typewriter ribbons, which coat-  
ing is applied to the ribbon surface intended  
for contact with the paper, and co-acts with  
the ink coating for the body of the ribbon in  
the transfer of the type impression.

In the manufacture of typewriter ribbons, it  
is customary to coat or impregnate the fabric  
of the ribbon with ink of a character fully  
understood in the art, and to inscribe the type  
impression by the direct contact of the inked  
fabric under the impact of the type. Such an  
operation tends to lack of uniformity in the  
appearance of the type impressions, due to va-  
riations in the strength of impact of the type,  
and to smear the ink and to lack of sharpness  
or clearness in definition of the writing.

The present invention consists essentially in  
the provision of a surface ink coating, which is  
applied directly to the surface of the ribbon in  
advance of the application of the ribbon ink  
for the purpose of initiating a sharper type  
impression than it is possible to secure directly  
from the ribbon ink and which sharp initial  
impression is strengthened and reinforced by  
the ribbon ink.

The ink surface coating of the present in-  
vention is of a harder or firmer consistency  
than that afforded by the ribbon ink, which  
impregnates the body of the ribbon, with the  
result that the type impact has the effect of  
first forming a relatively light or delicate and  
clear-cut impression created by the contact of  
the coating ink, and thereafter intensifying and  
deepening said initial impression.

In carrying out the details of the present  
invention, I find that by first coating a ribbon  
with the surface ink coating of carbon paper  
ink and afterwards impregnating the ribbon on  
the reverse side with ribbon ink of standard  
quality, and of the character now commonly  
employed in the making of typewriter ribbons,  
that a ribbon possessing the characteristics of  
the present invention will be produced.

The carbon paper ink is preferably of a firm  
consistency by reason of the inclusion of an  
adequate amount of hard wax gums or other  
hardening ingredient with the pigments and  
oils commonly employed in the making of car-  
bon paper coatings. The inclusion of the wax  
or other hardener gives a firm glossy surface  
to the ink coating, and prevents its ready trans-  
fer to the paper, save under the impact of the  
type, and the firm texture of the coating serves

to prevent spreading or smearing of the ribbon  
ink which reinforces the lines formed by the  
carbon ink coating.

It will also be understood that the present  
invention is not directed to any particular  
formula of ingredients employed in the ribbon  
ink and/or the surface coating, since the rib-  
bon ink may be of any standard quality com-  
monly employed in the making of typewriter  
ribbons, and the surface coating may be of any  
character commonly employed in the making of  
carbon sheets, it being understood, however,  
that a relatively firm textured surface coating  
is preferred for the purposes of the present in-  
vention.

If it is desired to positively retard the trans-  
fer and discharge of the ribbon ink, the ribbon  
first described may be additionally treated to  
a thin coating of cellulose on one of its surfaces  
before the application of the supplemental car-  
bon ink coating, so that the cellulose coating will  
act as a screen or filter through which the rib-  
bon ink must be driven before it can be expelled  
through the supplemental ink coating.

The ribbon treated in the manner last re-  
ferred to will have the cellulose surface coating  
applied to the fabric of the ribbon in the form  
of a thin surface layer, which is pervious to the  
passage of ribbon ink under pressure, and upon  
the surface of the cellulose coating the supple-  
mental carbon ink coating will be applied and  
constitutes the writing surface of the ribbon.  
In short the cellulose coating will be interposed  
between the fabric impregnated with the ribbon  
ink and the surface coating of carbon ink with  
the result that the transfer of the ribbon ink  
will be somewhat retarded and the supply of  
ribbon ink conserved.

The cellulose coating must be thinly applied in  
order not to render the surface of the fabric  
completely impervious to the penetration of the  
ribbon ink under the impact of the type.

The following constitutes a satisfactory for-  
mula for the cellulose coating: A mixture of  
pyroxylin solution and an equal amount of py-  
roxylin cement. The pyroxylin solution contains  
four parts of pyroxylin to five parts of a soft-  
ener, such as castor oil, to which is added a low  
boiling point solvent, such as ethyl acetate  
diluted with a quick drying liquid such as gaso-  
line, alcohol or acetone. Pyroxylin cement is  
the same as pyroxylin with the softener omitted  
and gums or resins added, which seem to give  
greater flexibility and adhesion.

The cellulose may be applied as a single

coating or additional coatings may be applied with a corresponding reduction in the penetrability of the coating and the amount of ribbon ink which will be driven through the coating under the impact of the type.

Although I have described a cellulose or like coating applied to the fabric of the ribbon for the purpose of retarding the transmission of the ribbon ink to the surface contiguous to the paper being typed, it will be understood that the use of the cellulose coating is optional and desirable only in cases where conservation of the ribbon ink is required.

The present invention is one which affords a firm glossy surface contiguous to the paper sheets, so that the danger of smearing or accidentally marking the sheets by contact with the ribbon is reduced to a minimum, and at the same time the clearness of the type impressions is enhanced.

I claim:

1. A typewriter ribbon comprising a fabric impregnated with ribbon ink and having a coating ink surface of relatively harder consistency to give sharp type impressions to be reinforced by the ribbon ink therethrough.

2. A typewriter ribbon having its fabric impregnated with ribbon ink and having a surface coating composed of ink of wax-like consistency, and adapted to give sharp type impressions to be reinforced by the ribbon ink.

3. A typewriter ribbon having its body fabric impregnated with ribbon ink and having a coating of carbon paper ink applied thereto.

4. A typewriter ribbon having its fabric impregnated with ribbon ink and having a surface coating of relatively firm carbon paper ink applied thereto.

5. A typewriter ribbon having its fabric impregnated with ink and having a surface coating of ink of a different consistency than the ink first mentioned.

6. A typewriter ribbon having its fabric impregnated with ink and having a coating of pervious material applied thereto to constitute a screen and having a surface coating of ink applied to the said screen coating.

7. A typewriter ribbon having its fabric impregnated with ink and having a coating of pervious material applied thereto to constitute a screen and having a surface coating of ink applied to the said screen coating,—the surface coating being of a firmer texture than the ink impregnating the fabric of the ribbon.

8. A typewriter ribbon having its fabric impregnated with ribbon ink and having a pervious coating applied thereto to form a screen for retarding the transmission of ribbon ink and the screen coating having a surface coating of ink of a different consistency applied thereto.

9. A typewriter ribbon having its fabric impregnated with ribbon ink and having a pervious coating applied thereto to constitute a screen for the passage of the ribbon ink and a surface coating for the screen consisting of carbon paper ink.

10. A typewriter ribbon having its fabric impregnated with ribbon ink and having a pervious coating applied thereto to constitute a screen for the passage of the ribbon ink and a surface coating for the screen consisting of carbon paper ink of relatively firm smooth surface texture.

S. EUGENE MILLER.

40

45

50

55

60

65

70

75

80

85

90

95

100

105

110

115

120

125

130

135

140

145

150