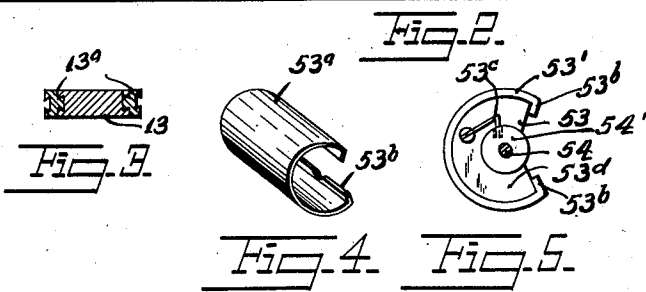
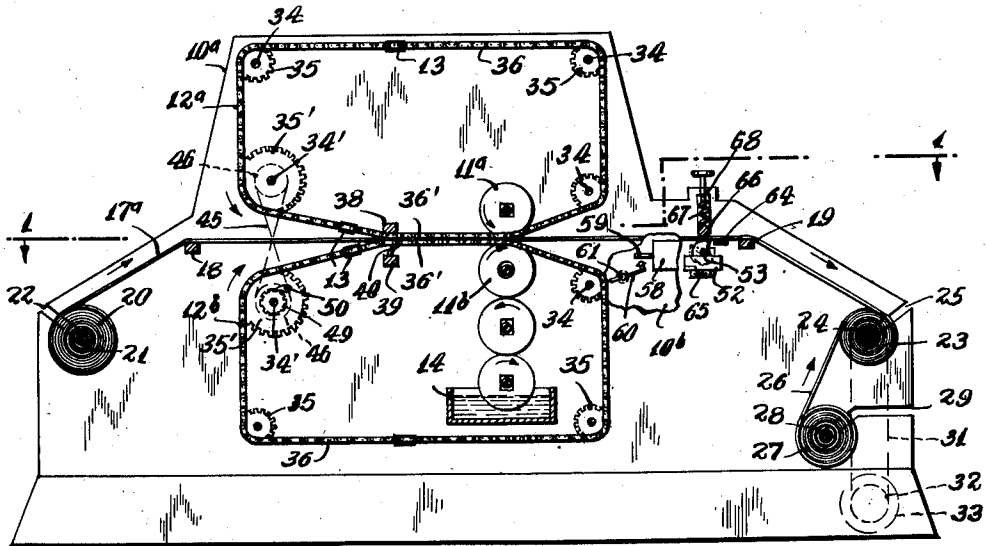
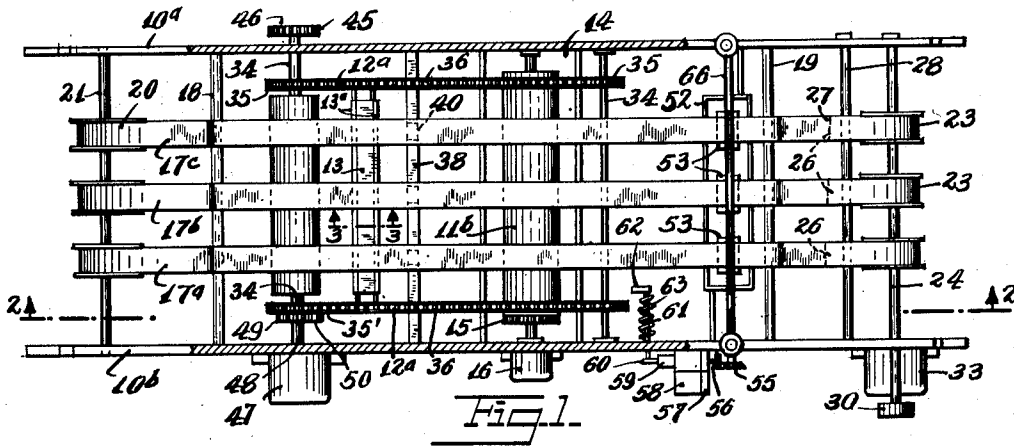


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AUTOMATIC INKING MACHINE FOR TYPEWRITER RIBBONS  
AND THE LIKE, WITH UNINKED PORTIONS  
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## UNITED STATES PATENT OFFICE

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AUTOMATIC INKING MACHINE FOR TYPE-  
WRITER RIBBONS AND THE LIKE, WITH  
UNINKED PORTIONS

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9 Claims. (Cl. 91—18)

This invention relates to new and useful improvements in an automatic inking machine for typewriter ribbons and the like, with uninked portions, treated portions or both.

5 The invention has for an object the construction of a device as mentioned which is characterized by a ribbon inking device including superimposed inking members, and a pair of superimposed endless carriers equipped with protection  
10 strips adapted to be periodically engaged against the top and bottom sides of a ribbon or ribbons guided and drawn between said inking members.

Furthermore the invention contemplates the association of means synchronized with said protection strips for applying shellac or other protection materials on all or a portion of each of  
15 said uninked portions of said ribbons.

A further object of the invention is the provision of a winding mechanism for winding up the inked ribbons, and a driving mechanism for the endless carriers arranged with a slip mechanism, so that the endless carriers may at any time, operate at the same speed as the winding mechanism.

25 It is a further object of this invention to make provision for adjusting the operative sizes of the inking members and the shellac applying means.

Still further the invention contemplates the construction of a device as mentioned which is simple and durable and which may be sold and  
30 manufactured at a reasonable cost.

For further comprehension of the invention; and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure;—

40 Fig. 1 is a horizontal sectional view of a device constructed according to this invention, this view being taken on the line 1—1 of Fig. 2.

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1.

45 Fig. 3 is a sectional view taken on the line 3—3 of Fig. 1.

Fig. 4 is a perspective view of the member for controlling the operative size of the shellac applying element.

50 Fig. 5 is an elevational view of the shellac applying element with the member shown in Fig. 4 applied.

The automatic inking machine for typewriter ribbons and the like with uninked portions includes a body having side walls or frame 10<sup>a</sup>

and 10<sup>b</sup> held in fixed positions by a plurality of transverse members hereinafter further described. An inking device is mounted upon said body and includes superimposed inking members 11<sup>a</sup> and 11<sup>b</sup>. A pair of superimposed endless carriers 12<sup>a</sup> and 12<sup>b</sup> are also mounted on said body and are equipped with protection strips 13 adapted to be periodically engaged against the top and bottom sides of said ribbon web and protect portions thereof from receiving ink. 10 A means is synchronized with said protection strips for applying shellac or other protective material on all or part of said uninked portions of the web.

The ribbon inking device consists of a plurality of rollers contacting with each other for transferring ink from an ink reservoir 14 mounted within said body. The rollers of the inking device are connected with each other by a train of meshing gears 15 upon the shafts of the rollers. 20

A motor 16 is mounted upon the body and drives one of the rollers to cause all of the rollers to rotate. A plurality of webs of material 17<sup>a</sup>, 17<sup>b</sup> and 17<sup>c</sup> are guided between the inking members 11<sup>a</sup> and 11<sup>b</sup> to receive ink therefrom. These webs extend over guiding elements 18 and 19 which are in the form of bars transversely mounted between the sidewalls of the body. The webs are drawn from rolls 20 mounted upon a shaft 21 which is engaged into slots 22 in the body, so that it may be readily removed. The webs are drawn upon rolls 23 mounted upon a shaft 24 supported through slots 25 in the side walls of the body, so as to be rotative. Protection interleaving strips 26 are drawn from rolls 27 upon a transverse shaft 28 supported in slots 29 formed in the side walls of the body. These interleaving strips serve to hold the turns of the inked ribbon separated. 35

The shaft 24 is driven with a slip pull contraction. There is a pulley 30 upon the shaft 24 which is engaged by a belt 31 which can slip when necessary. This belt 31 engages over the pulley 32 of an electric motor 33. 40

The endless carriers comprise a plurality of transverse shafts 34 and 34' equipped with sprockets 35 and 35' located near the side walls of the body and engaged by endless chains 36. The top carrier has two of said endless chains 36, and the bottom carrier is similarly constructed. The adjacent portions of the chains 35, namely the portions 36' are held in parallelism by transverse bars 38 and 39. The bar 39 is also equipped with tension elements 40 engaging one side of the ribbons. The tension elements 40 engage the 55

lower surface of the ribbons and press the ribbons against the bar 38 and cause sufficient tension to prevent the ribbons from becoming slack between the rollers 11 and 11<sup>b</sup> and the daubing elements 53. The chains also pass between grooved guiding portions upon the ends of the rollers 11<sup>a</sup> and 11<sup>b</sup>.

At regular intervals there are said protection strips which are mounted between the chains of the carriers. These protection strips are capable of passing between the rollers 11<sup>a</sup> and 11<sup>b</sup> for protecting portions of the ribbons from being inked. The rollers 11<sup>a</sup> and 11<sup>b</sup> may be of a soft material to allow the protection strips 13 to pass between them. The roller 11<sup>a</sup> has the conventional rectangular bearing housing which permits the bearing to slide and separate from roller 11<sup>b</sup> as the protection strips 13 pass between them.

The carriers are driven in unison by a chain 45 mounted between sprockets 46 on the shafts 34'. These shafts are driven positively with a slip forward arrangement. There is an electric motor 47 mounted upon the body and is equipped with the usual speed reducing attachment and having a shaft 48 with a sprocket 49 which is engaged by a one way ratchet 50 mounted upon the side of the lower sprocket 35'. The arrangement is such that the motor 47 may rotate the sprocket 35' and hence the carriers. Should it so be required, the carriers may move faster than the driving action of the motor by a relative movement of the ratchet 50 and the sprocket 49.

The means for applying the shellac or other protective materials on all or portions of the uninked portions of the ribbons consists of a receptacle 52 for liquid shellac or other material, into which dabbing elements 53 engage. These dabbing elements have arcuate sides adapted to engage the ribbons and cut out sides which do not reach the ribbons. This permits the dabbing elements to assume inoperative positions. The dabbing elements 53 are removably fixed upon a shaft 54 which is rotative between the walls of the body. A beveled gear 55 is mounted upon one end of the shaft 54 and meshes with a gear 56 from a reduction system of gears within a reduction unit 57. This reduction unit is driven by electric motor 58 which is mounted upon the body of the device. The motor 58 is controlled by a switch including a stationary contact 59 and a movable contact 60. This movable contact is fixed upon a stem 61 which is swiveled in the wall 10<sup>b</sup>.

An adjustable tail 62 is mounted upon the stem 61 and is in the path of motion of the protection strips 13 or a suitable projection on chain 36, by which the switch is operated. A spring 63 is mounted upon the stem 61 and is connected between the tail 62 and the wall 10<sup>b</sup> for normally holding the movable contact 60 in an open position. The circuit is only closed when the tail 62 is moved and held by a passing protective strip 13.

A transverse splash guard 64 is mounted between the sidewalls of the body immediately behind the dabbing elements 53. An electric heater 65 is mounted upon the bottom of the receptacle 52 by which its contents may be kept soft and mobile. A transverse guiding rod 66 is located immediately above the dabbing elements 53 and is urged downwards by springs 67 to a neutral position. This guiding element 66 is slidable in vertical slots 68 in the side walls of the body.

The protection strips 13 have removable strip sections 13<sup>a</sup> by which their operative widths may

be changed. Thus the lengths of uninked portions may be controlled. In order to correctly shellac the uninked portions of the ribbons, cover pieces 53<sup>a</sup> for the dabbers are provided. These cover pieces may be slipped on or taken off from the dabbers to change the sizes thereof. These covers 53<sup>a</sup> have edges 53<sup>b</sup> which are adapted to frictionally engage the dabbers. In Fig. 5, one of the covers 53<sup>a</sup> is shown mounted upon a dabber 53. The thickness of the dabber is such as to compensate for the removable sections of the protection strips. The dabbing elements 53 may be removed from the flange 54' of shaft 54, by lifting the free end of a retaining spring 53<sup>c</sup>. The other end of this spring is secured to the back of the dabbing elements 53. The dabbing element is also provided with a counterweight portion 53<sup>d</sup> to keep the dabber in normal starting position and may be replaced by other dabbing elements of different peripheral lengths so as to regulate the lengths of the ribbon to be treated. These counterweight portions 53<sup>d</sup> are formed of a heavy substance and provide a sufficient weight to make the armature of the motor 58 turn to a proper position while the motor is in the idle position.

The operation of the device is as follows:—

The motor 33 draws the ribbon upon the rolls 23 and at the same time draws the interleaving strips 26 between the turns of the rolls. The webs of ribbons receive ink from the inking members 11<sup>a</sup> and 11<sup>b</sup>.

Periodically the protection strips 13 from the carriers will engage against the top and bottom sides of the ribbon webs and pass between the inking members 11<sup>a</sup> and 11<sup>b</sup>, and so shield portions of the ribbon from receiving ink. The endless carriers are operated in unison by the motor 47.

The protection strips 13 after passing between the rollers 11<sup>a</sup> and 11<sup>b</sup> proceed along and engage the tail 62 of the switch 59, 60. The circuit is thus closed through the electric motor which functions to lift or rotate the dabbers 53 to apply shellac upon the uninked portions. The machine is so designed that the switch 59, 60, will be held closed the correct period of time because the switch 59, 60, cannot be opened until the protection strips 13 come in contact and pivot the adjustable tail 62 down causing the contact 60 to move up and close the switch which starts the motor 58. The guide rod 66 will maintain contact between the ribbons and the dabbing elements within slight changes of sizes of the dabbing elements due to the engagement and removal of the covers 53<sup>a</sup>.

It is to be understood that the inking machine or parts thereof may be of any suitable size, shape and proportion and built for inking either one or more ribbons of any color, of the usual standard width or for inking of a wide ribbon which may be cut into a number of standard widths after the inking is applied. Instead of separate motors, one single motor may be arranged to supply the motive power for the machine.

While I have illustrated and described the preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I

claim as new, and desire to secure by United States Letters Patent is:—

1. A device of the class described, comprising a body, a ribbon inking device thereon and including superimposed inking members, means for guiding and drawing ribbon webs between said inking members, a pair of superimposed endless carriers on said body and equipped with protection strips adapted to periodically engage against the top and bottom sides of said ribbon web and protect portions thereof from receiving ink.

2. A device of the class described, comprising a body, a ribbon inking device thereon and including superimposed inking members, means for guiding and drawing ribbon webs between said inking members, a pair of superimposed endless carriers on said body and equipped with protection strips adapted to periodically engage against the top and bottom sides of said ribbon web and protect portions thereof from receiving ink, and means synchronized with said protection strips for applying shellac or other protection material on all or part of said uninked portions of said web.

3. A device of the class described, comprising a body, a ribbon inking device thereon and including superimposed inking members, means for guiding and drawing ribbon webs between said inking members, a pair of superimposed endless carriers on said body and equipped with protection strips adapted to periodically engage against the top and bottom sides of said ribbon web and protect portions thereof from receiving ink, said inking device having an ink receptacle for supplying ink, and a plurality of transferring rollers.

4. A device of the class described, comprising a body, a ribbon inking device thereon and including superimposed inking members, means for guiding and drawing ribbon webs between said inking members, a pair of superimposed endless carriers on said body and equipped with protection strips adapted to periodically engage against the top and bottom sides of said ribbon web and protect portions thereof from receiving ink, said inking device having an ink receptacle for supplying ink, and a plurality of transferring rollers, and means for rotating said rollers.

5. A device of the class described, comprising a body, a ribbon inking device thereon and including superimposed inking members, means for guiding and drawing ribbon webs between said inking members, a pair of superimposed endless carriers on said body and equipped with protection strips adapted to periodically engage against the top and bottom sides of said ribbon web and protect portions thereof from receiving ink, said guiding and drawing means comprising transverse guiding bars, and rolls for receiving the web, and means for rotating said rolls.

6. A device of the class described, comprising a body, a ribbon inking device thereon and including superimposed inking members, means for guiding and drawing ribbon webs between said inking members, a pair of superimposed endless carriers on said body and equipped with protection strips adapted to periodically engage against the top and bottom sides of said ribbon web and protect portions thereof from receiving ink, said

guiding and drawing means comprising transverse guiding bars, and rolls for receiving the web, and means for rotating said rolls, including a belt which may slip.

7. A device of the class described, comprising a body, a ribbon inking device thereon and including superimposed inking members, means for guiding and drawing ribbon webs between said inking members, a pair of superimposed endless carriers on said body and equipped with protection strips adapted to periodically engage against the top and bottom sides of said ribbon web and protect portions thereof from receiving ink, and means synchronized with said protection strips for applying shellac or other protection material on all or a part of each of said uninked portions of said web, comprising a reservoir for shellac or material, dabbling elements engaging in said reservoir and engageable against said ribbons, means for operating said dabbling elements, and an electric switch controlled by said protection strips for controlling the operating means of said dabbars.

8. A device of the class described, comprising a body, a ribbon inking device thereon and including superimposed inking members, means for guiding and drawing ribbon webs between said inking members, a pair of superimposed endless carriers on said body and equipped with protection strips adapted to periodically engage against the top and bottom sides of said ribbon web and protect portions thereof from receiving ink, and means synchronized with said protection strips for applying shellac or other protection material on said uninked portions of said web, comprising a reservoir for shellac or material, dabbling elements engaging in said reservoir and engageable against said ribbons, means for operating said dabbling elements, and an electric switch controlled by said protection strips for controlling the operating means of said dabbars, said protection strips having removable end sections for changing the lengths of uninked portions of the ribbons.

9. A device of the class described, comprising a body, a ribbon inking device thereon and including superimposed inking members, means for guiding and drawing ribbon webs between said inking members, a pair of superimposed endless carriers on said body and equipped with protection strips adapted to periodically engage against the top and bottom sides of said ribbon web and protect portions thereof from receiving ink, and means synchronized with said protection strips for applying shellac or other protection material on said uninked portions of said web, comprising a reservoir for shellac or material, dabbling elements engaging in said reservoir and engageable against said ribbons, means for operating said dabbling elements, and an electric switch controlled by said protection strips for controlling the operating means of said dabbars, said protection strips having removable end sections for changing the lengths of uninked portions of the ribbons, and said dabbars being provided with removable covers for changing their sizes to coact with a change in their operative sizes of the protection strips.

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