Oct. 17, 1950 O. W. MARKES 2,526,571

RIBBON INKING DEVICE

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Fig. 1.

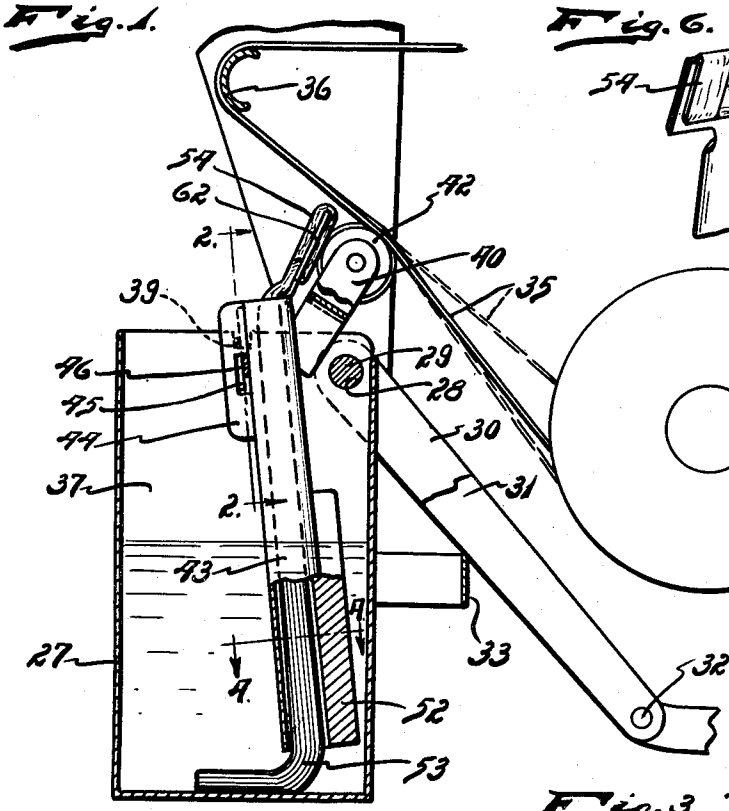


Fig. 6.

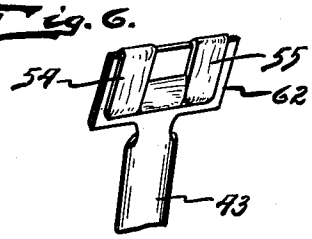


Fig. 2.

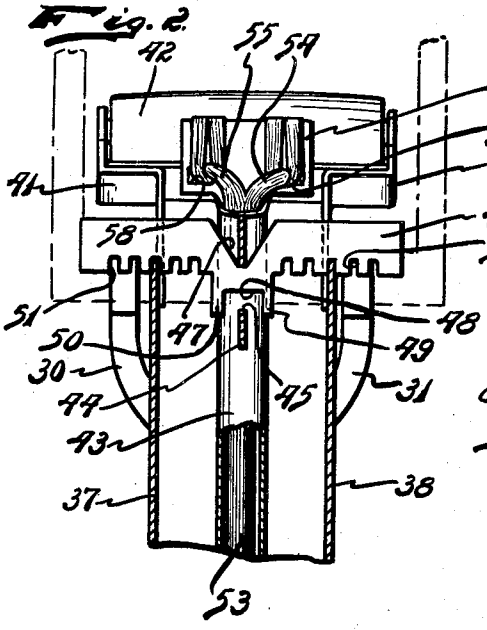


Fig. 3.

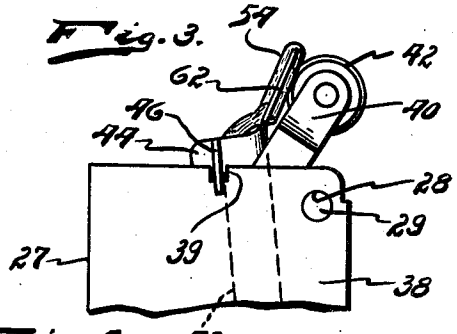


Fig. 5.

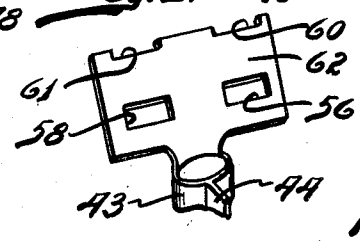


Fig. 4.



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Fig. 7.

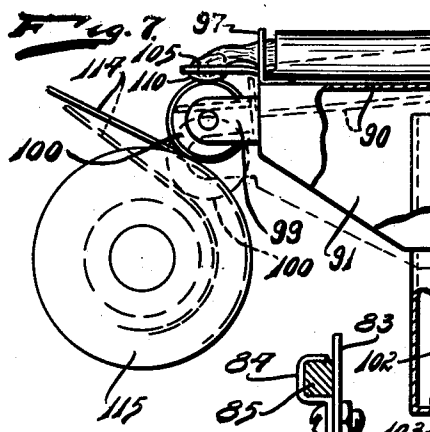


Fig. 8.

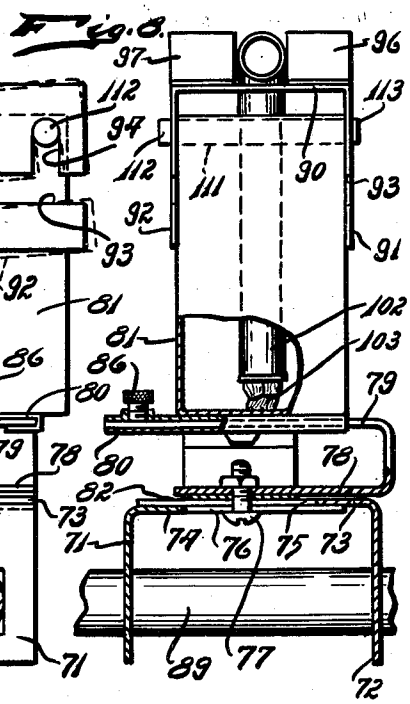


Fig. 10.

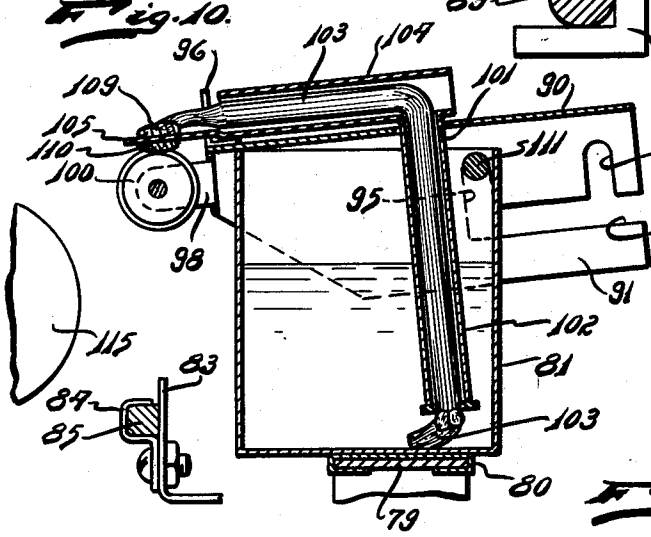


Fig. 11.

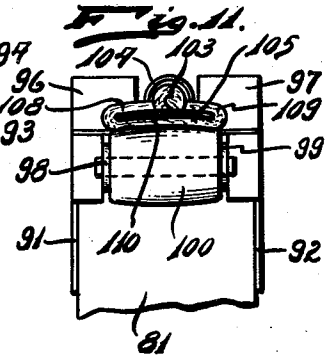


Fig. 9.

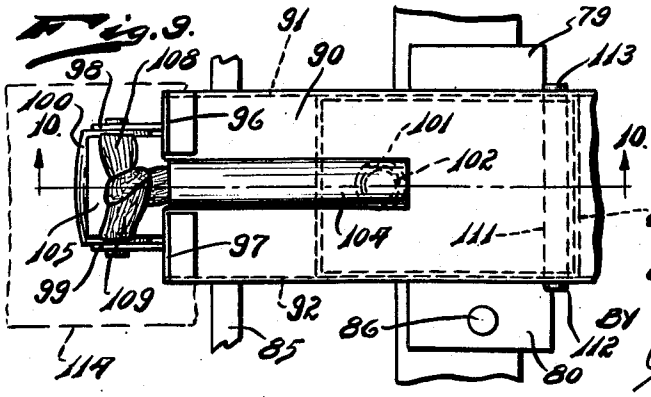
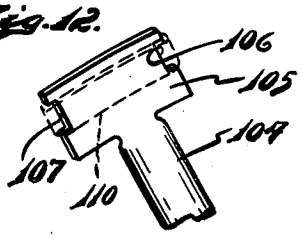


Fig. 12.



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RIBBON INKING DEVICE

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Fig. 13.

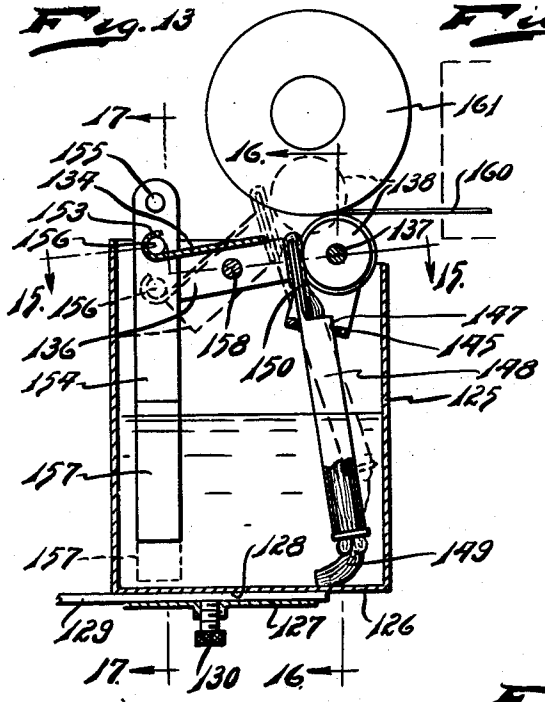


Fig. 14.

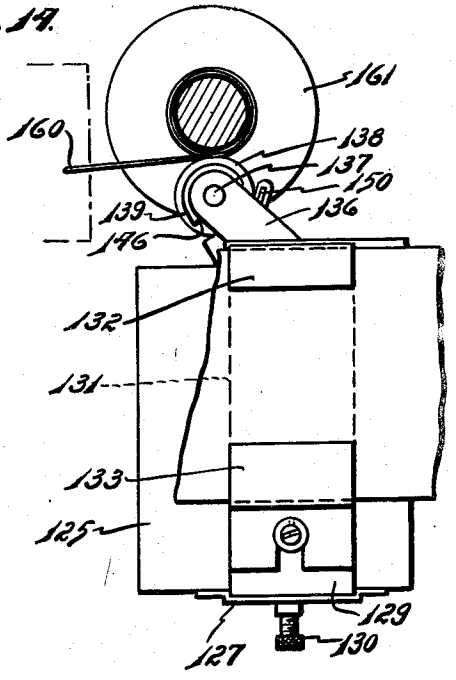


Fig. 15.

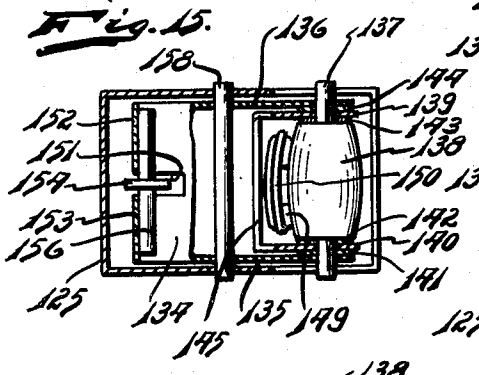


Fig. 16.

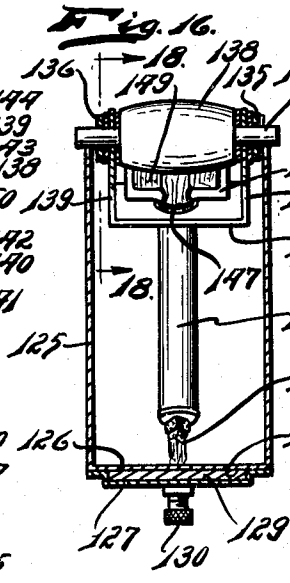


Fig. 17.

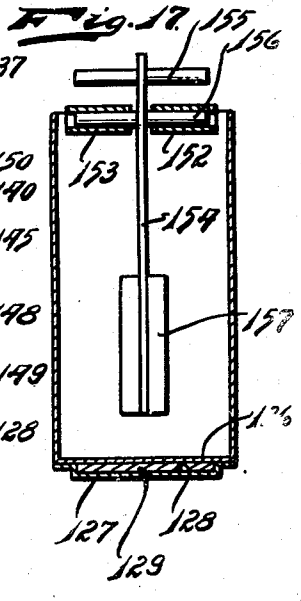


Fig. 18.

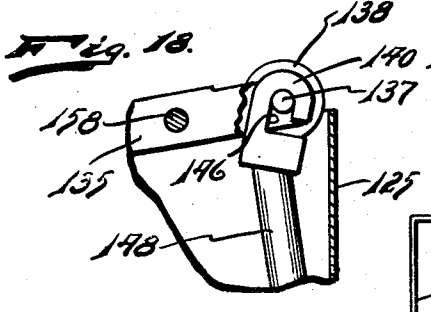
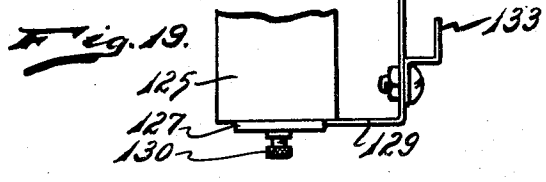


Fig. 19.



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Patented Oct. 17, 1950 2,526,571

UNITED STATES PATENT OFFICE

2,526,571

RIBBON INKING DEVICE

Orland W. Markes, Detroit, Mich.

Application December 3, 1945, Serial No. 632,503

4 Claims. (Cl. 91—48)

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My invention relates to a new and useful improvement in an inking device adapted for inking ribbons on writing machines which use an inked ribbon and against which the type or typing unit strikes to produce the impression on a paper or the like. It is an object of the present invention to provide an inking device of this class whereby the ink may be applied to the ribbon as it is being unwound from the reel and whereby the ink may be uniformly applied.

Another object of the invention is the provision of an inking device of this class whereby an inking roller may be maintained in contact with a ribbon as it is traveling from the reel and maintained in such contact as to present the necessary pressure for proper inking and yet at the same time free to move in the event the pressure applied should become excessive.

Another object of the invention is the provision of an inking device of this class having a roller of a width at least as wide as the ribbon to be inked and provided with means for maintaining the roller in contact therewith and also provided with means for inking the roller throughout its entire length or at specified parts thereof.

Another object of the invention is the provision in an inking device of this class of an ink-applying roller and means movable axially of the ink-applying roller for applying ink to the roller.

Another object of the invention is the provision of a swingably mounted ink applicator for inking roller and provided with a weight for maintaining the applicator in proper contact with the roller.

Another object of the invention is the provision of an ink applicator in an inking device so arranged and constructed that it may be readily moved to operative and inoperative position.

Another object of the invention is the provision of an inking device which will be simple in structure, economical of manufacture, durable, compact, and of light weight and easily and quickly attached to a machine having a traveling ribbon on which the ink is to be applied.

Other objects will appear hereinafter.

It is recognized that various modifications and changes may be made in the detail of structure illustrated without departing from the invention and it is intended that such shall be embraced within the scope of the claims which form a part hereof.

Forming a part of this specification are drawings in which,

Fig. 1 is a side elevational view of the invention

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showing it applied with parts broken away and parts shown in section,

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

Fig. 3 is a fragmentary side elevational view of the invention,

Fig. 4 is a sectional view taken on line 4—4 of Fig. 1,

Fig. 5 is a fragmentary perspective view of the wick-carrying member,

Fig. 6 is a perspective view of the wick-carrying member showing it from the rear,

Fig. 7 is a side elevational view of a slight modification of the invention with parts broken away and parts shown in section,

Fig. 8 is a rear elevational view of the form shown in Fig. 7,

Fig. 9 is a top plan view of form shown in Fig. 7,

Fig. 10 is a sectional view taken on line 10—10 of Fig. 9,

Fig. 11 is a fragmentary front elevational view of the invention,

Fig. 12 is a fragmentary perspective view of the wick-carrying member,

Fig. 13 is a central sectional view of another modification of the invention,

Fig. 14 is a side elevational view of the modification shown in Fig. 13 with parts broken away,

Fig. 15 is a sectional view taken on line 15—15 of Fig. 13,

Fig. 16 is a sectional view taken on line 16—16 of Fig. 13,

Fig. 17 is a sectional view taken on line 17—17 of Fig. 13,

Fig. 18 is a fragmentary view taken on line 18—18 of Fig. 16,

Fig. 19 is a fragmentary side elevational view of a part of the invention.

In Fig. 1, I have shown the invention embodying a reservoir or container 27 in which ink is deposited. This reservoir 27 has formed in its opposite side walls an opening 28 through which a pin 29 is projected for pivotally mounting the reservoir 27 on the yoke arms 30 and 31 which are fastened by the pivots or pins 32 on the machine with which the inking device is to be used. This machine also has a reel 34 onto which and out of which is wound an inking ribbon 35 which passes around a guide member 36. The reservoir 27 is provided with a bracket 33 which engages the yoke arms 30 and 31 and prevents the reservoir 27 from swinging beyond a pre-determined point.

Formed in the oppositely disposed walls 37 and 38 of the reservoir are registering notches 39.

Secured to and projecting outwardly from the upper end of the reservoir 27 are supporting arms 40 and 41 between which is rotatably mounted an ink-applying roller 42 which is adapted to contact one face of the ribbon 35.

A wick-containing tube 43 is provided on which is mounted a suitable bracket 44 having an opening 45 formed therein. Slidably projected through this opening 45 is a plate 46 having a notch 47 formed in one side and a recess 48 in the opposite side to provide the legs 49 and 50. Formed in the lower edge of this plate 46 are notches 51. This plate 46 serves as a supporting plate for the wick-carrying tube 43 and is adapted to rest upon the upper edges of the side walls 37 and 38 the plate 46 engaging in the notches 39.

Extending through the tube 43 so as to be submerged at its lower end in the ink contained in the reservoir 27 is a wick 53. The upper end of this wick is divided into a pair of parts 54 and 55 which extend through openings 56 and 58 formed in the plate 62. This plate 62 is provided with the notches 60 and 61 on its upper edge and the portions 54 and 55 are doubled over upon the plate after being passed through the openings 58 and 56 as shown in Figs. 2 and 6.

Mounted on the lower end of the tube 43 is a weight 52.

In use the structure is assembled as shown in Fig. 1. When it is desired to apply ink to the roller 42 the wick-carrying tube 43 is moved to the position shown in Fig. 1. And in this position the plate 46 is in engagement in the notches 49. When it is desired to move the wick-carrying tube to inoperative position the wick-carrying tube is elevated until the plate 46 disengages from the notches 39 whereupon the tube 43 may be moved away from the roller 42. It will be noted that the plate 46 is loosely mounted on the wick-carrying tube 43 so that a floating mounting is provided. This tube 43 may rock on the plate 46 as a pivot. In order that the wick portion which engages the roller 42 may be applied thereto with proper pressure the weight 52 is mounted on the tube 43. It will be noted that the plate 62 is at an incline to the axis of the tube 43 and that since the tube 43 has a tendency because of the weight 52 to move to vertical position the plate 62 is held in that position where the wick covering it engages the roller 42 at the proper pressure. It is of course free to rock away from the roller 42 against the pressure exerted by the tube 43 and the weight 52.

As clearly shown in Fig. 2, the plate 62 is of less width than the roller 42 and by moving the plate 46 so that successive notches 51 may engage the edges of the walls 38 and 37 the ink-applying wick portion which engages the roller 42 may be moved from end to end thereof. This construction makes it possible to ink only a portion of the roller so that if desired a narrow ribbon may be used or only a portion of the ribbon may be inked.

In Fig. 7, I have shown a modification. In the form shown in Fig. 7 I provide a pair of supporting legs 71 and 72 having the angularly turned portions 74 and 73 respectively which overlie each other and which are provided with the elongated slots 75 and 76 which project inwardly from one end thereof and through which engages or passes a bolt 77. This bolt 77 also passes through the plate 78 of a bracket which has the upwardly positioned plate 79 which is slidably projected into a channel 80 mounted on the base of the ink receptacle or reservoir 81. The set screw 86 is used to lock the plate 79 in fixed relation in the channel 80 so that the reservoir may be shifted longitudinally of the plate 79. The bolt 77 also passes through the plate 82 which is fixedly attached to the plate 78 and which is provided with the upwardly extended portion 83 against which may be secured, by means of the clip 84 the supporting bar 85 which is formed on the machine with which the inking device is to be used. The legs 71 and 72 are each provided with a recess 87 in which engages a bar 89 which also forms a part of the machine with which the device is to be used.

I provide a hood or cover for the reservoir 81 comprising the upper wall 90 and the side walls 91 and 92. Each of these side walls is provided with an elongated slot 93 communicating with the laterally directed slots 94 and 95. Upwardly projecting tongues 96 and 97 are formed on the top 90 at the forward end thereof. Projecting outwardly from the forward end of the side walls 91 and 92 of the hood are lugs 98 and 99 between which is rotatably mounted a roller 100.

Formed in the top 90 is an opening 101 through which is adapted to be projected a tube 102 which carries a wick this wick 103 extending throughout the length of the tube 102 and projecting beyond the lower end thereof so that the wick would be submerged in ink contained in the reservoir or receptacle 81. Mounted on the outer end of the tube 101 is a tube 104 extending substantially at right angles thereto and provided at its end with a plate 105 on the sides of which are formed the notches 106 and 107. The wick is divided into a pair of strands 108 and 109 which are folded around the plate 105 and engaged in the notches 106 and 107 so that there is a layer of wick extending across one face of the plate 105 as shown at 110 in Fig. 10.

Projected through the reservoir 81 and extending beyond the side walls thereof is a pin 111. The projecting ends 112 and 113 serve as trunnions which are adapted to engage in the slots 94 or 95. It will be noted that these slots 94 and 95 terminate below the top 90 so that when the hood is mounted on the reservoir 81 with the pin 111 engaging in the slots 94 or 95 the hood 90 has a tendency to tilt downwardly at its forward end as clearly shown in Fig. 10. When the hood is positioned in the location shown in Fig. 10 the inking roller 100 will be out of contact with the ribbon 114 which is wound on the reel 115. When it is desired to ink the ribbon 114 the hood is moved forwardly so that the pin 111 will engage in the slots 94 instead of the slots 95 as shown in Fig. 7. The roller will then engage the ribbon at the reel 115 or just as it is unwinding from the reel. As the ribbon unwinds and the diameter of the wound reel becomes less the forward end of the hood will tilt downwardly so that the roller 100 will maintain contact with the ribbon as clearly shown in dotted line in Fig. 7. The roller will of course receive the ink from the layer 110 of the wick which is folded over the face of the plate 105 and engages the periphery of the roller 100.

Experience has shown that this is a simple and effective device for inking a ribbon and by having the roller engage the ribbon as it unwinds from the reel an advantage is obtained as the

jerking of the ribbon takes place only at a distance from the reel and not at the point of contact where the roller 100 is adapted to engage. It is believed obvious that the shifting of the device from operative to inoperative position is an operation which may be easily effected.

The structure is also quite light and the reservoir is sufficiently large to provide a quantity of ink so that frequent attention to the device is avoided. Moreover, the reservoir 81 may be shifted to various positions by moving the same longitudinally of the plate 79 and the legs 71 and 72 may be moved to various distances of spaced relation so as to accommodate it for mounting on the structure of various heights of machines and various sizes of machines.

In Fig. 13, I have shown a further modification of the invention. In this structure the reservoir 125 is provided with a bottom 126. Mounted on the bottom 126 is a plate 127 which is spaced therefrom to provide the channel or space 128 in which a suitable bracket plate 129 may slide, a set screw 130 serving to lock the reservoir 125 in fixed relation on the plate 129. This plate or bracket 129 is provided with the upwardly projecting portion 131 having the hood 132 formed at its upper end and provided with the L-shaped bracket 133 whereby the structure may be fastened to a suitable support on the machine with which used. A plate 134 is provided at its opposite sides with downwardly projected flanges 135 and 136 through which is extended a pin 137 on which is rotatably mounted a roller 138. This pin 137 also projects through the legs 139 and 140 of U-shaped structure having a bight 145. Suitable spacing washers 141, 142, 143, and 144 are used. As shown in Fig. 18 these legs 140 and 139 of the U-shaped structure are provided with slots 146 for the reception of the pin 137 so that the U-shaped structure may be readily attached and detached from the pin 137.

The bight 145 is provided with a central opening 147 through which is projected a wick-containing tube 148 through which extends the wick 149 projecting from the lower end thereof so as to be in contact with the ink which is deposited in the reservoir 125. Projecting outwardly from the upper end of this wick-containing tube 148 is a plate 150 around which is folded the upper ends of the wick 149 which is adapted to engage the periphery of the roller 138. The plate 134 is provided at one of its ends with the inwardly projecting slot 151 which serves to divide the plate into a pair of tongues which are curled to form half-knuckles 152 and 153. A rocking bar 154 is provided with the rods 155 and 156 which project therethrough and extend outwardly from oposite sides thereof. This bar 154 is sufficiently narrow to enter the slot 151 as clearly shown in Fig. 15. A weight 157 is carried at the lower end of the bar 154. A shaft 158 is extended through the flanges 135 and 136 and also through the side walls of the reservoir 125 so as to rockably mount the plate 134 on the side walls and within the reservoir 125.

In use the reservoir would be mounted on the part of the machine with which used so that the roller 138 could contact the ribbon 160 which is wound onto and wound from the reel 161. The roller 138 and the tube 148 are of sufficient weight so that these parts tend to rock the plate 134 downwardly. In order to rock the plate 134 upwardly so that the roller will maintain contact with the ribbon 160 I provide the bar 154 with the weight 157 attached thereto. When this bar is inserted in the slot 151 and elevated so that the pin 156 engages the plate 134 the lower end of the bar will be elevated from the bottom 126 of the reservoir and will by gravity rock the plate 134 downwardly against the weight of the tube 148 and the roller 138 and the assembled parts so that this bar 154 serves to normally maintain the roller 138 in engagement with the ribbon. The roller is inked from the contact of the wick with the periphery thereof. Since the U-shaped structure embodying the legs 139 or 140 and the bight 145 tends to swing downwardly to the vertical and since the tube 148 which is slightly smaller than the opening 147 tends also to swing to vertical position the upper end of the tube which carries the plate 150 will always be maintained in contact with the periphery of the roller 138. As the ribbon is unwound from the reel 161 the weight 157 will move downwardly so that the plate 134 will be rocked upwardly at the roller bearing end as shown in the dotted lines in Fig. 13 or in full lines in Fig. 14, to always maintain contact with the surface of the ribbon 160. When it is desired that the device be rendered inoperative the bar 154 may be raised and then placed in position so that the pin 155 will engage the plate 134. When in this position however, the lower end of the weight 157 will rest upon the bottom 126 and the roller 138 will be swung downwardly out of engagement with the ribbon 160.

It is believed that it is obvious that the wick-bearing tube 148 together with the U-shaped member embodying the bight 145 may be readily removed and replaced without disturbing the mounting of the other parts. Experience has shown that a reservoir mounted slidably on a support as indicated is possessed of considerable advantages and experience has also shown that with a roller pressed against the ribbon in the manner indicated a smooth operating device is provided and one which will effectively ink a ribbon as it is wound off of or wound onto the reel 161.

What I claim is:

1. In an inking device of the class described a reservoir adapted for the reception of ink; a roller rotatably mounted on said reservoir and projecting outwardly therefrom and adapted for engaging the surface of a ribbon to be inked; a wick-carrying tube; a wick projected through said tube and contacting at one end the ink in said reservoir and projecting at its opposite end, outwardly beyond the end of said tube; a rigid supporting member on said tube for supporting the outwardly projecting end of said wick and pressing the same against the periphery of said roller; a bracket on said tube; a cross bar detachably engaging the edges of said reservoir and engaging said bracket for rockably mounting said tube thereon.

2. In an inking device of the class described a reservoir adapted for the reception of ink; a roller rotatably mounted on said reservoir and projecting outwardly therefrom and adapted for engaging the surface of a ribbon to be inked; a wick-carrying tube; a wick projected through said tube and contacting at one end the ink in said reservoir and projecting at its opposite end, outwardly beyond the end of said tube; a rigid supporting member on said tube for supporting the outwardly projecting end of said wick and pressing the same against the periphery of said roller; a bracket on said tube; a cross bar detachably

engaging the edges of said reservoir and engaging said bracket for rockably mounting said tube thereon, said cross bar being sufficiently long for permitting movement of said supporting member axially of said roller for applying ink at various locations axially thereof.

3. In an inking device of the class described, a reservoir adapted for the reception of ink; a roller rotatably mounted on said reservoir and projecting outwardly therefrom and adapted for engaging the surface of a ribbon to be inked; a wick-carrying tube projected at its lower end into said reservoir; a wick projected through said tube and extending beyond the ends of said tube, said wick at the lower end of said tube contacting the ink in said reservoir, and the wick at the upper end of said tube being adapted for contacting said roller; and a supporting bar for supporting said tube, said supporting bar being positioned adjacent the upper portion of said reservoir and engaging said tube adjacent its upper end, the portion of said tube above said bar being of less weight than the portion of said tube below said bar and said bar being rockable in response to gravity for maintaining the upper end of said wick in engagement with said roller.

4. In an inking device of the class described, a reservoir adapted for the reception of ink; a roller rotatably mounted on said reservoir and projecting outwardly therefrom and adapted for engaging the surface of a ribbon to be inked; a wick-carrying tube projected at its lower end into said reservoir; a wick projected through said tube and extending beyond the ends of said tube, said wick

at the lower end of said tube contacting the ink in said reservoir, and the wick at the upper end of said tube being adapted for contacting said roller; and a supporting bar for supporting said tube, said supporting bar being positioned adjacent the upper portion of said reservoir and engaging said tube adjacent its upper end, the portion of said tube above said bar being of less weight than the portion of said tube below said bar and said bar being rockable in response to gravity for maintaining the upper end of said wick in engagement with said roller; and a rigid supporting member carried by said tube and engaging the upper end of said wick and preventing flexing of the same upon engagement of the same with said roller.

ORLAND W. MARKES.

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