W. H. COTTON.

RIBBON INKING MACHINE.

APPLICATION FILED JULY 5, 1912.

1,094,533. Patented Apr. 28, 1914.

Fig. 1.

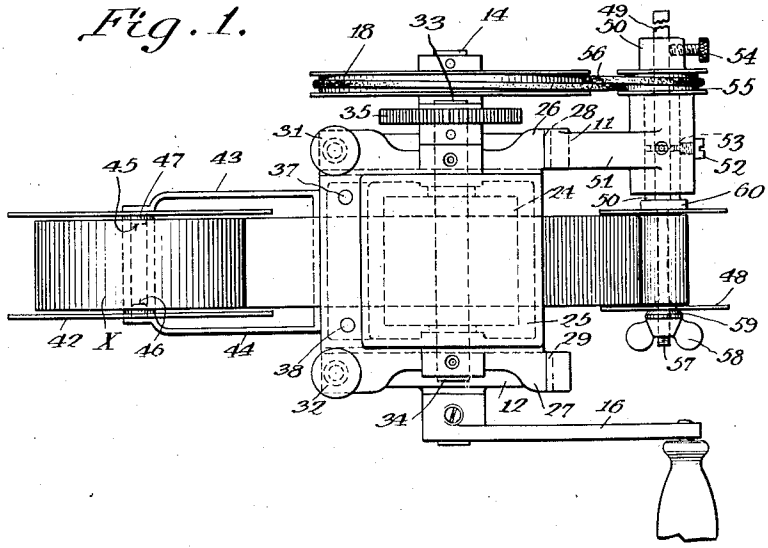


Fig. 2.

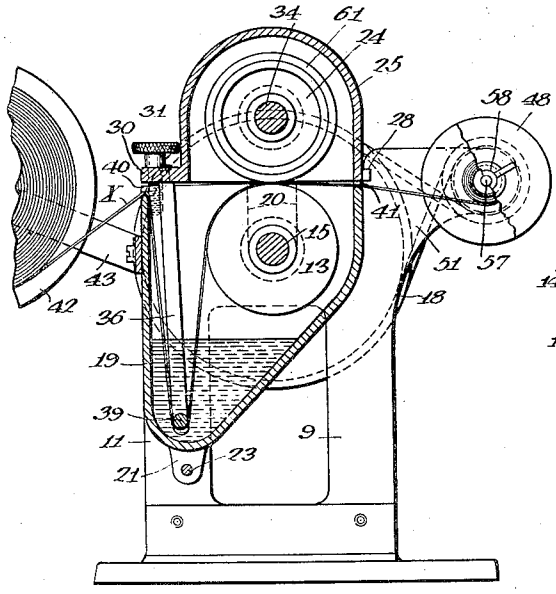
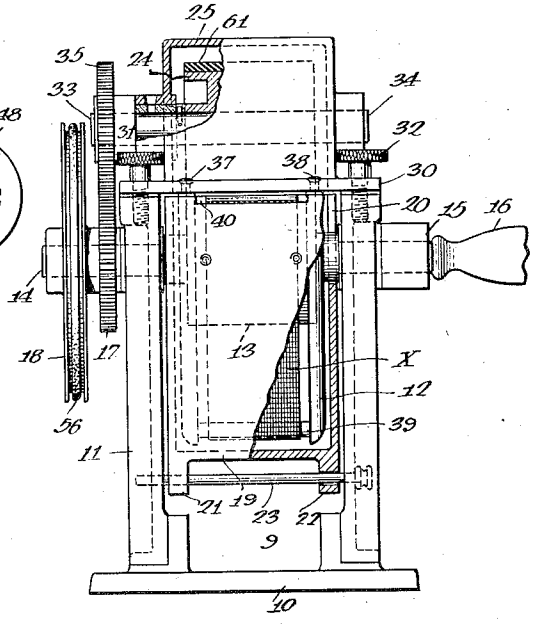


Fig. 3.



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UNITED STATES PATENT OFFICE.

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RIBBON-INKING MACHINE.

1,094,533. Specification of Letters Patent. Patented Apr. 28, 1914.

Application filed July 5, 1912. Serial No. 707,808.

To all whom it may concern:

Be it known that I, WALTER H. COTTON, a citizen of the United States, and resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Ribbon-Inking Machines, of which the following is a specification, and which are illustrated in the accompanying drawings, forming a part thereof.

The invention relates to machines for impregnating a web with ink.

The object of the invention is to provide a machine which may be conveniently used in offices and like places for the preparation of typewriter ribbons for immediate use.

To this end the invention contemplates a machine which is of simple and improved construction and which has provision for completely housing the ink container.

In the accompanying drawings: Figure 1 is a plan view of a ribbon inking machine embodying the features of improvement provided by the invention; Fig. 2 is a central longitudinal sectional view of the same, some of the parts being broken away; and Fig. 3 is an end view of the same, some of the parts being omitted and others being broken away to show the internal construction.

The machine is preferably of such size that it may be conveniently used upon a table, desk or suitable stand. As shown, the parts are arranged upon a frame 9, the same comprising a base plate 10 and upright standards 11 and 12. A roller 13 for conveying the ribbon, as X, to be inked, extends transversely between the standards 11 and 12, adjacent their higher ends. Preferably this roller has a smooth hard surface, as by being formed of metal. The trunnions 14, 15 of the roller 13 are journaled in and extend through and beyond the standards 11 and 12. For operating the machine, a crank 16 is preferably applied to the projecting end of one of the trunnions, as 15. The projecting end of the other trunnion, as 14, may carry a spur gear 17 and a belt pulley 18.

A container for receiving the supply of ink is shown at 19. This container is preferably of trough shape and is most desirably of such size and shape as to extend between the standards 11 and 12 and inclose the roller 13. In order that the container 19 may be conveniently removed from the frame of the machine, as for cleansing or refilling, it is preferably detachably held between the standards 11 and 12. As shown, its side walls are notched, as indicated at 20, to receive the trunnions 14, 15 of the roller 13, and a pair of apertured lugs 21, 22 project downwardly from the bottom of the container, their respective apertures being in alinement. A pin 23, removably set through the standards 11 and 12 and extending through the apertures of the lugs 21 and 22, serves to support the container 19 in the frame. The container being passed upwardly about the roller 13 so as to receive the trunnions 14, 15 in the notches 20 of its side walls, is fixed in position on the standard by passing the pin 23 through the apertures of the lugs 21 and 22. The container 19 is thus firmly held in position, as the pin 23 serves to support it and the trunnions 14, 15 of the roller 13 serve to prevent its higher end from tilting.

In the operation of the machine, the web X is impregnated with the ink progressively from one end of the same. For this purpose it is drawn through a bath of ink held within the lower part of the container 19 and thence between the roller 13 and a second roller 24 which is mounted above the roller 13 and cooperates with it in pressing the ink into the fabric of the web and removing the surplus.

Most desirably a chambered cover 25 is provided for the container 19, and the roller 24 is carried by this cover and housed within its chamber. For detachably holding the cover in place over the container 19, the cover 25 is preferably provided with a pair of laterally projecting lugs 26, 27 adjacent one edge thereof, and the frame members 11 and 12 are provided with horizontal sockets, as 28, 29, for receiving these lugs respectively. The front edge of the cover 25 is provided with a flange 30. Set screws 31, 32, passed through this flange and into the frame 9 and having threaded engagement with the latter, serve for clamping the front edge of the cover in place. The trunnions, as 33, 34, of the roller 24 are journaled in the side walls of the cover 25. One of these trunnions, as 33, preferably projects through the cover and carries a spur gear 35 which meshes with the gear 17 when the cover 25 is fitted in place above the container 19. The fitting of the cover 25 in place upon the frame 9 above the container 19, also serves

to position the roller 24 to coöperate with the roller 13, and the set screws 31 and 32 provide a means for adjusting the pressure to be exerted by these rollers upon the web. The cover 25 preferably also carries a yoke 36 for deflecting the web X into the ink bath which is held in the lower part of the container 19. As shown, this yoke takes the form of a U-shaped frame having its ends secured to the flange 30, as indicated at 37, 38. The cross piece 39 at the foot of the frame serves for engaging and guiding the web X. Preferably the front and rear edges of the container 19 are notched, as indicated at 40 and 41, to provide for the passage of the web over the walls of the container in line with the yoke 36 and rollers 13, 24.

The web X may be supplied from any convenient holder, as the reel 42. As shown, this reel is positioned for delivering the web to the container 19 through the notch 40, by being held between a pair of oppositely facing spring arms 43, 44, each having an inwardly directed lug, 45, 46, at its outer end for entering the core 47 of the reel. As shown, the arms 43, 44 are attached to and carried by the front wall of the container 19. The elasticity of the arms 43, 44 provides a means for retarding the rotation of the reel 42 as the web X is drawn therefrom.

After the web X has been impregnated with the ink, it is preferably wound upon a spool, as 48. Most desirably this spool is of a form capable of use upon a typewriter to which the web will be applied. To this end the spool 48 is removably held in place, and the invention contemplates that it will be removed and replaced by a similar spool when a length of web sufficient for use upon a typewriter has been wound thereon.

For receiving the spool 48 a longitudinally adjustable rotatable mandrel is provided. This mandrel extends through a bushing 50. The bushing 50 is conveniently journaled in a bracket extension 51 of one of the standards, as 11, of the frame 9. A set screw 52, passed through the journal of the bushing 50 and entering a circumferential groove 53 in the bushing serves for preventing longitudinal displacement of the bushing. The mandrel 49 is held within the bushing 50 by a set screw 54. By this means it is caused to rotate with the bushing, but may be longitudinally adjusted therein. A belt pulley 55, mounted on the bushing 50 and connected with the belt pulley 18 by a crossed belt 56, serves for driving the bushing and mandrel to wind the web upon the spool 48.

The mandrel 49 is made of greater length than the length of the bushing 50, and projects beyond the bushing at one end, as indicated at 57, Fig. 1, for entering the core of the spool 48. This projecting end of the mandrel is threaded to receive a wing nut 58. An annular shoulder 60, formed on the mandrel 49 adjacent its end, serves as an abutment against which the spool may be clamped by the wing nut 58, and a conical washer 59 mounted on the mandrel 49 in front of the wing nut serves for centering the spool about the mandrel. By longitudinally adjusting the mandrel 49 within the bushing 50, through the use of the set screw 54, the shoulder 60 may be adjusted in position to position spools 48 of different width in alinement with the rollers 13 and 24. Furthermore the set screw 54 may be loosened to permit the mandrel 49 to be rotated independently of the bushing 50 when it is desired to wind a loose end of the web upon the spool without operating the machine.

In preparing the machine for use, a reel 42 containing a quantity of the web X, will be placed between the spring arms 43, 44. The cover plate 25 being removed, the end of this web will be extended over the roller 13 and secured to the spool 48. The cover plate 25 will then be fitted in place, the yoke 36 thereby engaging the web and deflecting it downwardly into the bath of ink held within the lower portion of the container 19. The set screws 31 and 32 being applied and properly adjusted to regulate the pressure between the rollers 13 and 24, the crank handle will be operated to rotate the rollers 13, 24 and the spool 48, thus drawing the web from the reel 42 and winding it upon the spool 48. When the crank handle 16 has been operated a sufficient length of time to cause an inked portion of the web to reach the spool 48, the uninked portion of the web will be cut off and removed from the spool and the new end fastened upon the spool. The machine may then be operated by turning the crank handle 16 to ink a sufficient quantity of the web to fill the spool 48. The web will then be severed adjacent the spool 48 and the filled spool will be removed. When another ribbon is required, a new spool will be fitted upon the mandrel 49 and the new end of the web being attached to such spool, the operation is repeated. It will thus be seen that if the reel 42 is made of sufficient size to supply webbing for a quantity of typewriter ribbons, this entire quantity may be prepared for use as required, without it being necessary to either remove the cover plate 25 or otherwise handle parts of the machine which have been in contact with the ink. Preferably the roller 24 has a yielding surface as by being coated with a rubber composition, as shown at 61.

I claim as my invention:

1. In a ribbon inking machine in combination, a pair of upright standards, a feed roll located between the standards and having trunnions at its opposite ends journaled in the respective standards, the length of the

feed roll being less than the distance between the standards, an ink pot fitting the space between the standards and having slots extending downwardly from the upper edges of its two side walls for receiving the respective trunnions of the feed roll, an apertured lug carried by the wall of the said ink pot below the lower ends of the said slots and a pin removably entering the aperture of the said lug and engaging one of the said standards.

2. In a ribbon inking machine, in combination, a pair of horizontally disposed cooperating pressure and feeding rolls, an openable two-part housing inclosing the rolls and one of the parts of the housing being extended below the rolls to provide a well for receiving the ink, one of the rolls being carried by each part of the housing with the line of engagement between the rolls substantially in the plane of division between the parts of the housing, and the walls of the housing adjacent the joint between its parts and at opposite sides of the rolls being adapted to provide for the entrance and exit of a ribbon for passage between the rolls, and a deflecting arm removably held between the parts of the housing and entering the said well, whereby each roll is located within the chamber of the part of the housing by which it is carried and a ribbon may be threaded through the housing and between the rolls upon separation of the parts of the housing and removal of the said deflecting arm.

3. In a ribbon inking machine, in combination, a pair of horizontally disposed cooperating pressure and feeding rolls, an openable two-part housing inclosing the rolls and one of the parts of the housing being extended below the rolls to provide a well for receiving the ink, one of the rolls being carried by each part of the housing with the line of engagement between the rolls substantially in the plane of division between the parts of the housing, and the walls of the housing adjacent the joint between its parts and at opposite sides of the rolls being adapted to provide for the entrance and exit of a ribbon for passage between the rolls, whereby each roll is located within the chamber of the part of the housing by which it is carried and a ribbon may be threaded through the housing and between the rolls upon separation of the parts of the housing, and means for deflecting the ribbon into the said well in advance of its passage between the rolls.

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