Jan. 5, 1937. H. A. SWANSON 2,066,863

INKING MECHANISM

Filed April 5, 1934

Fig. 1.

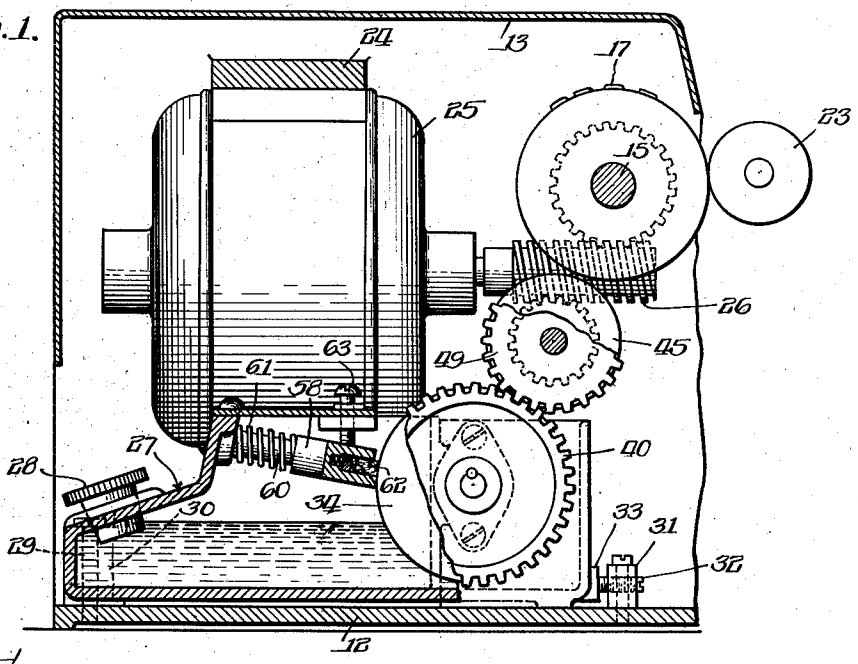


Fig. 2.

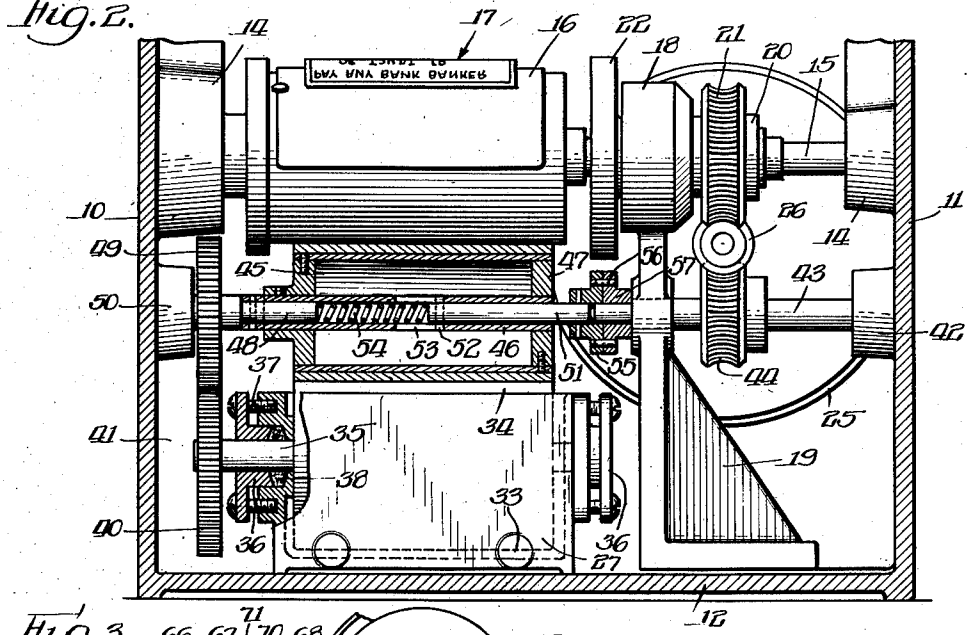
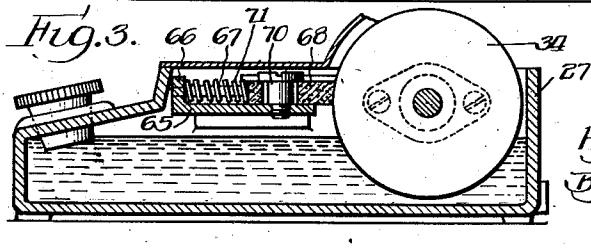


Fig. 3.



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INKING MECHANISM

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5 Claims. (Cl. 101—350)

The invention relates to inking mechanism and has reference more particularly to novel structure for supplying ink to the printing member of portable machines such as check signing and endorsing machines.

An object of the invention is to provide inking mechanism composed of relatively few parts, simply and compactly arranged, and designed to prevent the accumulation of a surplus quantity of ink on the inking roller and in which the continuous feed of the proper amount of ink to said roller is definitely effected.

Another object is to provide inking mechanism having an inking roller readily removable from its mounting means to facilitate cleaning and an ink reservoir which is adjustable with respect to said inking roller to vary the quantity of ink supplied thereto and which also mounts an ink distributing roller removable from the reservoir for cleaning purposes.

Another object is to provide inking mechanism having novel ink retrieving means and which will effectively remove the surplus ink from the surface of the ink distributing roller without materially retarding the rotation of the same.

With these and various other objects in view, the invention may consist of certain novel features of construction and operation as will be more fully described and particularly pointed out in the specification, drawing and claims appended hereto.

In the drawing which illustrates an embodiment of the device and wherein like reference characters are used to designate like parts—

Figure 1 is an elevational view, parts being shown in section, of inking mechanism constructed in accordance with the invention;

Figure 2 is a front elevational view, parts being shown in section, of the mechanism of Figure 1; and

Figure 3 is a sectional view showing the ink reservoir equipped with modified structure for retrieving the surplus ink.

The drawing shows the invention as applied to a check signing and endorsing machine having side members 10 and 11 connected by base 12 and provided with a cover 13. The frame members have inwardly directed bosses 14 for journalling shaft 15 having non-rotatably secured thereto the printing cylinder 16 which carries a type plate designated in its entirety as 17. Rotatable on shaft 15 so as to rotate independently thereof and journalled by the boss 18 formed integral with the support is a sleeve 20 which has fixedly secured thereto the gear 21 and clutch member 22. The printing cylinder is associated with an impression member 23 which forms a printing couple therewith.

The side frames are connected by a transverse supporting member 24 which provides the supporting means for the power unit in the form of an electric motor 25 having the worm gear 26 suitably secured to its rotor shaft and having meshing engagement with gear 21 to drive sleeve 20 as described. The sleeve and the outer clutch member 22 secured thereto is rotated continuously by the electric motor but the rotation of the type cylinder is intermittent as the clutch is actuated each time a sheet of paper is dropped between the type cylinder and the impression cylinder to perform a printing operation. The type cylinder makes one revolution to bring the type 17 into impression with the sheet of paper and then into contact with an inking roller which supplies the type with ink as will be more particularly described.

The inking mechanism includes a reservoir 27 removably fastened within the frame of the machine by means of a securing screw 29 which extends through an opening formed in boss 30 to secure the reservoir to the base 12, said reservoir having an opening for filling the same with ink and which is normally closed by cap 28. Limited movement in a direction toward the stop members 31 is permitted in order that the reservoir may be adjustably positioned within the frame with respect to an inking roller to be presently described so that the quantity of ink delivered thereto may be varied to suit conditions. Each of the stop members 31 carries a set screw 32 which contacts with a boss 33 formed on the outside of the reservoir 27. By adjusting the set screws proper positioning of the reservoir is effected.

The reservoir journals an ink distributing roller 34 non-rotatably mounted on shaft 35 which is supported for rotation by collars 36 located to the sides of the reservoir respectively and held in place within a recess concentric with the shaft by screws 37. The hub portions of the collars apply pressure to packing 38 located within each recess to form a sealing joint with the shaft and thus prevent the escape of the ink from the reservoir. The left hand end of shaft 35, Figure 2, has fixedly secured thereto the gear 40, the end of the said shaft extending beyond the gear being journalled in boss 41. After the reservior has been removed from the frame the roller 34 can be readily removed therefrom by loosening screw 37 to release the pressure exerted by collars 36 and withdrawing the shaft 35 from the roller, the

same being slidably mounted on said shaft for movement axially thereof although having a non-rotatable fit therewith.

Journalled in boss 42 formed on side member 11 and supporting standard 19 is a shaft 43 having fixedly mounted thereon a gear 44 meshing with the drive pinion 26. The shaft 43 forms driving means for an inking roller 45 located intermediate the printing cylinder and roller 34 and which is provided with a central tube 46 secured to the end members 47 of the cylinder. Projecting from one end of tube 46 and non-rotatably secured thereto is a stud shaft 48 on which is mounted gear wheel 49, said stud shaft being journalled for rotation in boss 50 formed on the side member 10. Projecting from the other end of the tube 46 is a second stud shaft 51 non-rotatably fixed to the tube by the pin 52 extending through the shaft and riding within a slot 53 formed in the tube. Coil spring 54 located within the tube between the ends of shafts 48 and 51 yieldingly forces the shaft 51 outwardly. The projecting end of shaft 51 is fixedly secured to a disc 55 having a plurality of openings for receiving the pins 56 projecting from a companion disc 57 fixedly secured to the end of shaft 43 projecting beyond the support 20. The above structure permits removal of the inking roller for cleaning of the same although when in operative position the roller is driven by shaft 43 which in turn is driven from the motor 25.

In the structure of Figure 1 the means for removing the surplus ink from the roller 34 comprises a member 58 extending the length of the roller and supported on studs 60 which mount the coil springs 61 for yieldingly forcing the member toward the roller. The member is bifurcated or recessed along its forward edge and carries a strip of felt or other suitable material 62 within the recess thereof. The lower forward edge of the member has engagement directly with the surface of the roller to form the ink retrieving means returning the surplus ink to the reservoir. Thereafter the felt engages with the surface of the roller and evenly distributes the ink remaining on the roller. Limited adjustment of the position of member 58 vertically of the roller is possible through the rotation of the threaded screw 63 with which the member engages to hold the same against upward movement during rotation of said roller.

A modification of the above structure is shown in Figure 3 wherein the reservoir is provided with a supporting member in the form of a bridge 65 having a rear flange carrying a plurality of pins 67. The supporting bridge carries a strip of felt or other suitable material 68 secured thereto by the adjusting screws 70 which are located within a slot formed in the strip of felt, permitting movement of the same in a direction toward the surface of the ink distributing roller 34. The coil springs 71 carried by the pins 67 engage the strip of felt 68 to yieldingly force the same into engagement with the surface of the cylinder to wipe the same of the surplus ink.

In operation of the inking mechanism described the ink is picked up by the roller 34 and distributed evenly over the surface of the same by the ink retrieving means 62 or 68 and subsequently transferred to the inking roller 45 which is preferably provided with a surface of rubber or similar material. From the inking roller the ink is transferred to the type plate 17 upon rotation of the printing member to bring the type plate into contact with the roller. The remaining surface of the printing member does not contact with the inking roller as the two are disposed in spaced relation which is necessary since the inking roller has rotation while the printing member is held stationary, the said printing member being intermittently rotated, whereas, the inking roller is continuously rotated. Adjustment of the pressure between roller 34 and inking roller 45 is accomplished by varying the position of the reservoir with result that the quantity of ink supplied to said inking roller can be varied to suit conditions. The ink retrieving means is also a factor in regulating the supply of ink to the printing member. Limited adjustment of member 58, Figure 1, is possible by varying the position of the stop screw 63 although the ink removed from the roller and returned to the reservoir depends primarily on the coil springs 61 and the pressure applied by said springs in forcing the member against the roller. In the construction of Figure 3 the springs 71 also yieldingly force the strip 68 into contact with the roller and determine the quantity of ink retrieved. In this modification their action can be regulated to a much greater extent by adjustment of screws 70 which when released allow full pressure to be applied by the springs and when tightened hold the member in desired position on the bridge.

It is to be understood that I do not wish to be limited by the exact embodiment of the device shown, which is merely by way of illustration and not limitation, as various and other forms of the device will of course be apparent to those skilled in the art without departing from the spirit of the invention or the scope of the claims.

I claim:

1. In inking mechanism, the combination with a type carrying cylinder, of an inking roller for supplying ink thereto, means rotatably mounting said roller for contact with the type on said type cylinder, an ink reservoir, a shaft journalled in said reservoir, means at each end of said shaft removably secured to the reservoir and forming a sealing fit with the ends respectively to prevent leakage of ink from the reservoir while permitting rotation of the shaft, and an ink distributing roller mounted on said shaft and having rotation therewith.

2. In inking mechanism, the combination with a type carrying cylinder, of an inking roller for supplying ink thereto, means rotatably mounting said roller for contact with the type on said type cylinder, an ink reservoir, a shaft journalled in said reservoir and extending through the wall on one side thereof, means removably secured to the reservoir and forming a sealing fit with the ends of the shaft respectively to prevent leakage of ink from the reservoir while permitting rotation of the shaft, an ink distributing roller mounted on said shaft and located within the reservoir, and power means operatively connecting with the extending end of the shaft for continuously rotating the same.

3. In inking mechanism of the character described, in combination, an inking roller, means rotatably mounting said roller, a reservoir, a second roller journalled in said reservoir, and adapted to contact said inking roller to supply ink thereto, ink retrieving means carried by said reservoir for removing surplus ink from said roller and for returning the same to the reservoir, said means including a recessed member carrying a felt strip within the recess thereof, and resilient means yieldingly forcing the member

toward said second roller and retaining the lower edge of said member and said felt strip in contact with the roller.

4. In inking mechanism of the character described, in combination, an inking roller, means rotatably mounting said roller, a reservoir, a second roller journalled in said reservoir, and adapted to contact said inking roller to supply ink thereto, ink retrieving means adjustably carried by said reservoir including a recessed member carrying a felt strip in the recess thereof, and coil springs yieldingly holding the member in contact with said second roller, whereby said member removes the surplus ink from said second roller and returns the same to the reservoir and said felt strip evenly distributes the ink remaining on the roller.

5. In inking mechanism of the character described, in combination, an inking roller, means rotatably mounting said roller, a reservoir, a second roller journalled in said reservoir, and adapted to contact said inking roller to supply ink thereto, ink retrieving means carried by said reservoir including a bifurcated member carrying a felt strip between the spaced arms thereof, said member providing a lower edge contacting the second roller for removing the surplus ink and returning the same to the reservoir, and resilient means yieldingly holding said edge and felt strip in contact with said second roller.

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