

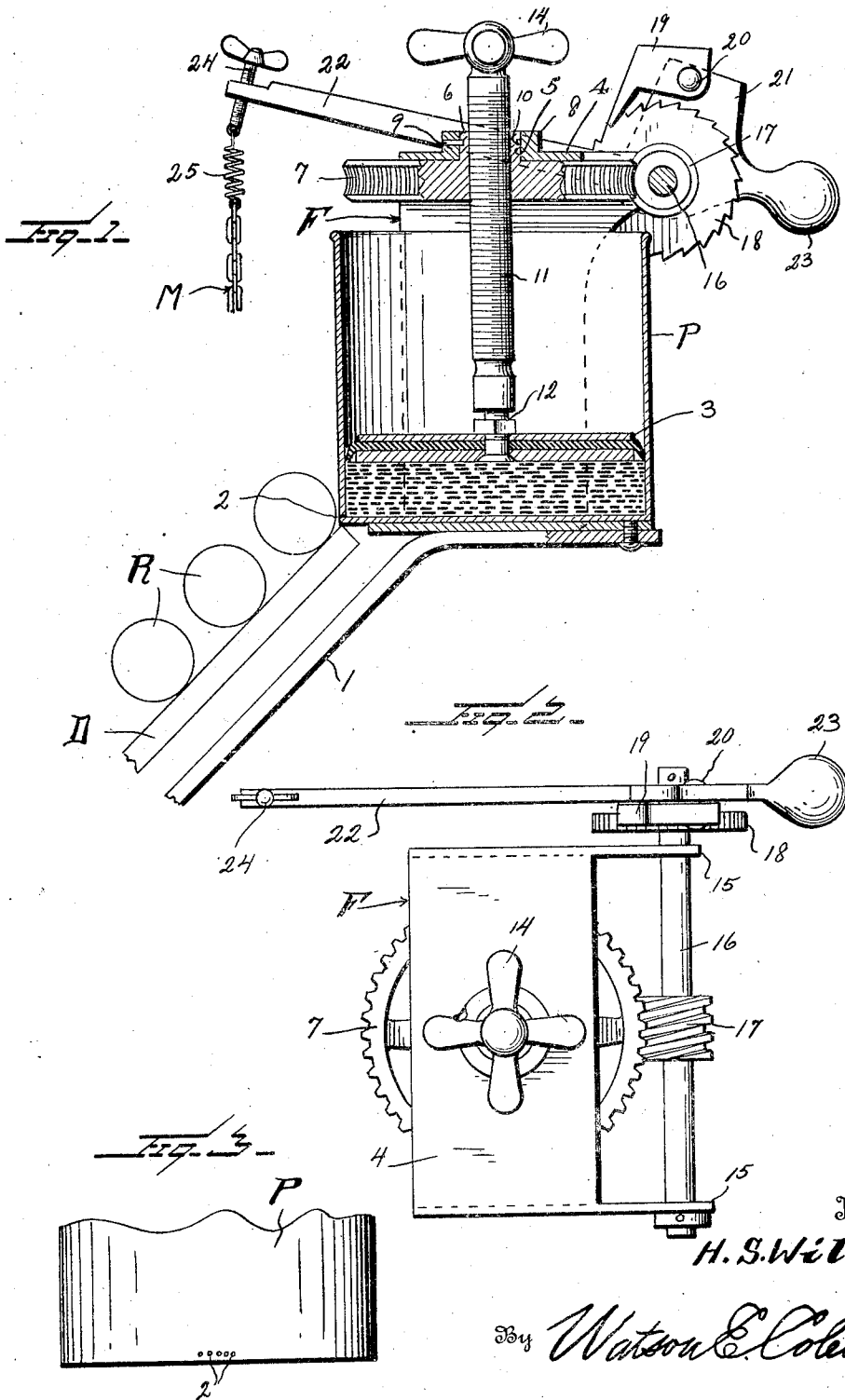
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INK FEEDING APPARATUS

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INK-FEEDING APPARATUS.

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This invention relates to certain improvements in ink feeding apparatus and has relation more particularly to a device of this general character especially designed and adapted for use in connection with the inking disks of jobbing presses, although it is to be understood that I do not limit myself to this particular use.

It is an object of the invention to provide an apparatus of this general character comprising an ink pot provided with a restricted discharge orifice and which is normally closed or sealed by a plunger, together with means for forcing said plunger inwardly of the pot to effect a discharge of the ink through the orifice.

Another object of the invention is to provide a novel and improved apparatus of this general character wherein the requisite feeding of the ink to the disk may be effected either mechanically or manually, the mechanical operation being preferably of an automatic character.

Another object of the invention is to provide an apparatus of this general character wherein is employed an ink pot or container which may be readily applied or removed and thereby permitting convenient replacement of an empty pot or container and also to provide means whereby the pot or container of ink may be readily and conveniently shipped through the mails or otherwise, the closure for the pot or container constituting a plunger or pressure head for use to effect the discharge of the ink as required.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved ink feeding apparatus, whereby certain important advantages are attained and the device rendered simpler, less expensive and otherwise more convenient and advantageous for use, as will be hereinafter more fully set forth.

The novel features of my invention will hereinafter more fully set forth.

The novel features of my invention will hereinafter be definitely claimed.

In order that my invention may be the better understood, I will now proceed to describe the same with reference to the accompanying drawing, wherein:—

Figure 1 is a fragmentary view, partly in section and partly in elevation, illustrating an ink feeding apparatus constructed

in accordance with an embodiment of my invention.

Fig. 2 is a view in top plan of the apparatus as herein disclosed, and

Fig. 3 is a fragmentary view in front elevation of the lower portion of the ink pot or container.

As disclosed in the accompanying drawing, 1 denotes an upstanding supporting arm disposed on a requisite incline and which underlies the inking disk D. This disk D is of conventional character and has coacting therewith in a well-known manner the inking rolls R. As the construction and operation of the disk D and the rolls R form no part of my present invention, it is believed that detailed description and illustration thereof is unnecessary.

Carried by the upper portion of the arm 1 in close proximity to the upper bight of the disk D, is a vertically disposed frame F, said frame having its central opening of a size to readily permit positioning therein of the pot or container P.

The pot or container P is formed preferably of suitable metal with its upper or top portion normally open. The side wall of the pot or container P at a point slightly above its bottom wall, has produced there-thru a plurality of minute discharge openings or orifices 2. The pot or container P is adapted to contain a supply of printer's ink and is normally closed by a piston or plunger 3, said piston or plunger hermetically closing the upper portion of the can whereby the ink therein is effectively protected against oxidation. While it is true that a certain amount of air will attempt to enter thru the orifices 2, yet the oxidization of the ink within said orifices will serve to effectually seal the same and prevent escape of the ink therethru until pressure is applied upon the piston or plunger 3. However, to further assure the requisite sealing of these orifices 2 a rubber band or the like may be disposed around the lower portion of the pot or container P and over the orifices. The use of this band or the like is particularly desirable when the filled pot or container is being shipped thru the mails or otherwise.

The upper member 4 of the frame F at substantially its center is provided with an opening 5 through which extends the upstanding boss 6, carried by the central portion of a worm gear 7. The boss 6

extends through a flange 8 defining the opening 5 and directed through said flange 8 is a pin 9, the inner or inserted end portion of which engages within a peripheral groove 10 in the boss 6 whereby the worm gear 7 is effectually maintained in applied position, yet permitted to have unhindered rotation.

Threaded through the boss 6 and the axial center of the gear 7 is a stem or rod 11, the lower end portion of which is adapted to contact from above the upstanding pin 12 arranged at the axial center of the piston or plunger 3, so that upon requisite rotation of the gear 7 the rod or stem 11 will be caused to move downwardly, exerting sufficient pressure upon the plunger or piston 3 to effect the desired discharge of the ink through the orifices 2. The upper end of the rod or stem 11 is provided with a hand wheel 14 whereby the stem or rod 11 may be manually operated. This is a particular advantage in starting the flow of ink or when it is desired to move the rod or stem 11 outwardly sufficiently to permit a ready application or removal of the pot or container P in working position upon the frame F.

The upper portion of the frame F is provided with a pair of outstanding parallel arms 15 which rotatably support the shaft 16, said shaft having fixed thereto a worm 17 meshing with the worm gear 7. One end portion of the shaft 16 has affixed thereto a ratchet wheel 18 with which engages a dog 19 pivotally connected as at 20 with an upstanding portion 21 of a lever 22. This lever 22 is supported for swinging movement by the shaft 16 and is provided with a rearwardly directed weighted tail piece 23 whereby upward movement of the lever 22 is effected automatically by gravity.

The outer end of the lever 22 has threaded therethru the shank 24, to the lower end portion of which is secured a flexible member M. This member M is also adapted to be affixed to the conventional arm of the inking rolls R so that as said rolls R are moved across the disk D in one direction requisite pull will be imposed upon the member M to swing the lever 22 downwardly. As the lever 22 swings downwardly, the dog 19 will engage the ratchet wheel 18, resulting in a slight rotation of the worm gear 7. This rotation of the worm gear 7 will cause the rod or stem 11 to move downwardly a distance commensurate with the extent of rotation of the gear 7. This downward movement of the stem or rod 11, bearing upon the piston or plunger 3, will result in a discharge of ink thru the orifices.

The extent of rotation of the gear 7 upon each downward movement of the lever 22 may be regulated as desired by proper adjustment of the shank 24, in accordance with the number of teeth over which the

dog 19 passes upon upward swinging movement of the lever 22. The flexible member M, as herein disclosed, is adapted to have interposed therein one or more springs 25, so that if for any reason the downward movement of the stem or rod 11 will be stopped, the resultant expansion of the spring 25 will permit unhindered movement of the roller R. This is a particular advantage in the event the pot or container P is completely emptied and the plunger or piston 3 is in direct contact with the bottom thereof. In view of this fact, it will be readily understood that this spring 25 operates effectively to prevent injury to the mechanism of the apparatus under such abnormal conditions.

As illustrated in Fig. 1 of the drawings, it is to be noted that the discharge orifices 2 of the pot or container P are closely adjacent the upper roller R when at the limit of its upward movement so that the ink as discharged through the orifices 2 will come in direct contact with the periphery of said roller and thereby assure the proper distribution of the ink over the disk D.

By having the ink to be delivered to the disk D in a container or pot P, it will be readily observed that such pot or container with a new supply of ink, can be applied when desired and furthermore by having the pot or container P readily removable, ink of one color can be quickly and conveniently substituted for that of another color, and this is a particular advantage because after the pot has been removed, it is not necessary that the same be cleansed. It will also be readily observed that by this interchangeability of the pots or containers P in the change of any color it is only required that the disk D and rolls R be cleaned as is now done.

From the foregoing description it is thought to be obvious that an ink feeding apparatus constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated, and it will also be obvious that my invention is susceptible of some change and modification without departing from the principles and spirit thereof and for this reason I do not wish to be understood as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention in practice except as hereinafter claimed.

What I claim is:—

1. In combination with an inking disk of a printing press, a vertically disposed frame positioned in close proximity to the disk, a pot having an orifice discharging upon the disk, a plunger within the pot and constituting a closure therefor, a rod secured to the axial center of the plunger, the upper member of

the frame having an opening through which said rod extends to a point above the frame, a gear threaded on the rod, said gear being provided with an outstanding boss extending within the opening of the upper member of the frame, means coacting with said upper member of the frame and the boss for holding the gear to said member and permitting the gear to rotate, a shaft rotatably supported by the frame having a gear in mesh with the gear on the rod, and means for intermittently rotating the shaft.

2. In combination with an inking disk of a printing press, a vertically disposed frame positioned in close proximity to the disk, a pot supported within the frame, said pot having an orifice discharging upon the disk, a plunger within the pot and constituting a closure therefor, a rod secured to the axial center of the plunger, the upper member of the frame having an opening through which said rod extends to a point above the frame, a gear threaded on the rod, said gear being provided with an outstanding boss extending within the opening of the upper member of the frame, means coacting with said upper member of the frame and the boss for holding the gear to said member and permitting the gear to rotate, a shaft rotatably supported by the frame having a gear in mesh with the gear on the rod, a ratchet fixed to the shaft, a lever supported by the shaft for swinging movement and provided with a rearwardly directed weighted tail piece to automatically effect swinging movement of the lever in one direction, a pawl carried by the lever engageable with the ratchet, and means for intermittently imparting movement to the ratchet in the opposite direction.

In testimony whereof I hereunto affix my signature.

HOWARD S. WILSON.