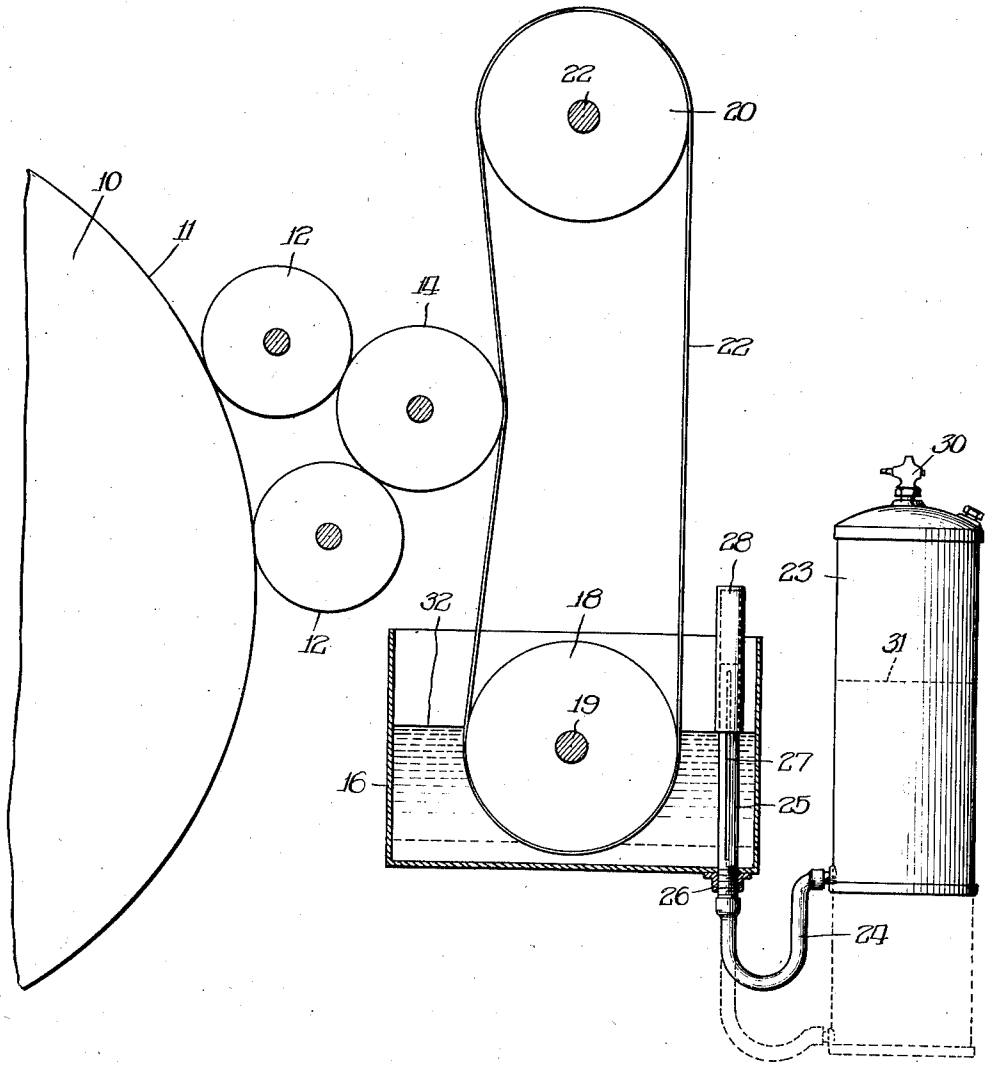
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DAMPENING MECHANISM FOR PRINTING PRESSES

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Inventor:
Arthur B. Mitchell
By Wilkinson, Huxley, Cyrus & Knight
Attys.

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DAMPENING MECHANISM FOR PRINTING PRESSES

Arthur B. Mitchell, La Grange, Ill., assignor to Miehle Printing Press & Manufacturing Company, Chicago, Ill., a corporation of Illinois

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The invention relates to dampening mechanism for lithographic, printing and other reproducing apparatus, and is illustrated in mechanism for selectively controlling the supply of moisture to the plate cylinder of a lithographic offset press.

An object of the invention resides in the provision of mechanism for supplying moisture to planographic printing plates which will be of simple construction, employing relatively few parts, and which can be applied to presses now in use.

Another object is to provide dampening mechanism that will operate efficiently to maintain an adequate supply of moisture on the printing member and which will be thoroughly diffused over the non-design surface thereof to produce the most perfect printing results.

A still further object is to provide dampening mechanism having means for adjusting the level of the liquid in the fountain so as to vary the quantity of moisture supplied to the printing member of the press.

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—

The figure is a vertical sectional view showing dampening apparatus constructed in accordance with the invention and illustrating its association with a printing cylinder.

Referring to the drawing, 10 indicates a plate carrying cylinder of the press having a printing plate 11 mounted thereon in the usual manner. In contact with the printing plate 11 are dampening rollers 12—12 preferably covered with molleton and which in turn contact a distributing roller 14 generally mounted for axial reciprocation. The plate cylinder 10 is rotated by means forming part of the printing press and is suitably inked by inking rollers, which structure is not shown as the same does not concern the invention.

The dampening mechanism for supplying moisture to the distributing roller 14, and which is transferred to the printing plate 11 by the dampening rollers 12, includes a water fountain 16 supported by suitable frame structure, not shown. A roller 18 is located within the fountain, being suitably journalled by the shaft 19. Supported in spaced relation with respect to roller 18 is an upper roller 20 journalled in framework, not shown, by means of shaft 21. Passing around the rollers 18 and 20 is an endless band of cloth 22 such as cheese cloth, muslin or other moisture absorbing material. The rollers are driven at a constant speed either by an independent source of power or from the printing press to thereby produce constant movement of the cloth band 22. The direction of rotation of the rollers is such as to cause the left side of the band to travel upwardly, which side, as clearly shown in the drawing, is in contact with roller 14. As the direction of movement of the band is from the fountain roller to the distributing roller 14, moisture will be carried by the band from the fountain to roller 14. The dampening rollers 12 will eventually distribute the moisture from roller 14 over the non-design surface of the printing plate 11.

In the structure above described, with the cloth band moving at a constant speed the amount of moisture delivered to the roller 14 is dependent on the level of the liquid in the fountain 16. This level is maintained at any height desired within the limits of the fountain by apparatus which will now be described.

The tank or receptacle 23 comprises a reservoir containing a supply of the liquid to be delivered to the fountain 16. The tank is suitably supported so as to have movement vertically and is connected by hose 24 to supply tube 25 projecting upwardly within the fountain 16 and having threaded connection at 26 to the base of the fountain. Said base is provided with an elongated slot 27, which slot can be adjusted as to length by the close fitting telescoping sleeve 28. The tank 23 has an air vent 30 which is closed when the tank is elevated, that is, located as substantially shown in the drawing.

With the tank 23 in this position the liquid will reach a level indicated by numeral 31 forming a partial vacuum above the liquid. The liquid level in the fountain, indicated by 32, is determined by the particular adjustment of the sleeve 28. The water in the tank and fountain will remain in equilibrium until level 32 drops below the sleeve which thereby admits air to the tube 25. The air travels through hose 24 to the tank and partially relieves the vacuum within tank 23. This allows some liquid to flow from the tank into the fountain. Entrance of air to the tank and the flow therefrom will continue until the liquid in the fountain reaches the sleeve 28, whereupon the tube 25 is closed to the atmosphere. Therefore, as the water from the fountain is used up by the moisture absorbing band 22 the same is automatically replenished by the structure de-

scribed. Accordingly, the invention provides apparatus for automatically maintaining the liquid in the fountain at the desired level and which can be varied so as to vary the quantity of moisture taken up by the cloth band and delivered to the roller 14. As liquid is removed from the tank 23 it is necessary for the operator to elevate the tank from time to time so as to keep the level of the liquid in the tank above that in the fountain.

When the tank 23 is lowered to a position as shown in dotted lines and the vent 30 is opened the water will drain from the fountain. This procedure is followed when the roller 18 is to be removed in order to replace the band 22 with a clean band. Before returning the tank to its elevated position it is necessary to close vent 30 so that a partial vacuum will be created within the tank by the flow of the water from the same to the fountain.

When the liquid level in the fountain is above the axis of roller 18, as shown in the drawing, that portion of the cloth band 22 passing around the roller is completely immersed and thus when the band leaves the roller the same is in a thoroughly saturated condition and substantially the maximum quantity of moisture will be supplied to the roller 14. By setting the sleeve 28 so as to lower the liquid level in the fountain a smaller proportion of the cloth band 22 is immersed and the duration of the immersion period is lessened. Thus, when the band leaves the roller 18 the same is only partly saturated and less moisture is supplied to the roller 14. Other adjustments of the sleeve 28 to lower the liquid level in the fountain will cause saturation of the band 22 to a less degree until the minimum setting for the device is reached, when the liquid level assumes substantially the dotted line position as shown in the drawing, where only a very small portion of the band 22 is immersed as it travels around the roller 18. The present dampening mechanism, therefore, will supply to roller 14 just the desired amount of moisture to suit the particular requirements of the printing member and the moisture will be thoroughly diffused over the non-design surface of the member so as to produce the most perfect printing results.

The invention is not to be limited to or by details of construction of the particular embodiment thereof illustrated by the drawing, as various 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.

What is claimed is:

1. In a dampening device, a distributing roller, a liquid reservoir, and a moisture absorbing medium in the form of an endless cloth band having spaced end loop portions, said band having operation to transfer the liquid from said reservoir to said roller.

2. In a dampening device, a distributing roller, a liquid reservoir, and a moisture absorbing medium in the form of an endless cloth band having spaced end loop portions, said band being adapted to contact said roller and having a portion thereof immersed in said reservoir, whereby said band will supply moisture to the roller when movement is imparted thereto.

3. In a dampening device, a distributing roller, a movable moisture absorbing medium in the form of an endless cloth band having spaced end loop portions, one intermediate portion of the band between said end loop portions having contact with the roller, and a liquid reservoir saturating the band so that the same will carry moisture to said roller.

4. In a dampening device, a distributing roller, a movable moisture absorbing medium in the form of an endless cloth band having contact with the roller, supporting members for the respective end loop portions of said band, and means saturating said band as the same passes over one of said supporting members, whereby the band supplies moisture to said roller.

5. In a dampening device, a distributing roller, a movable moisture absorbing medium in the form of an endless cloth band having contact with the roller, supporting members for the respective end loop portions of said band and over which said band passes, and a liquid reservoir saturating said band as the same passes over one of said supporting members, whereby the band supplies moisture to said roller.

6. In a dampening device, a distributing roller, a movable moisture absorbing medium in the form of an endless cloth band having contact with the roller, a member above and below the roller for supporting the respective end loop portions of said band and over which said band passes, and a liquid reservoir journalling one of said members, whereby the band is saturated as it passes through the reservoir and moisture is supplied to the roller.

7. In a dampening device, a distributing roller, a liquid fountain located below said roller and journalling a supporting member, a second supporting member located above the distributing roller, and an endless cloth band supported by said members and having contact with the distributing roller, whereby said band absorbs moisture as it passes through the fountain and supplies the same to the distributing roller.

8. In a dampening device, a distributing roller, a liquid fountain located below said roller and journalling a supporting member, a second supporting member located above the distributing roller, an endless cloth band supported by said members and having contact with the distributing roller, whereby said band absorbs moisture as it passes through the fountain and supplies the same to the distributing roller, and means for varying the level of the liquid in the fountain.

9. In a dampening device, a distributing roller, a liquid fountain located below said roller and journalling a supporting member, a second supporting member located above the distributing roller, an endless cloth band supported by said members and having contact with the distributing roller, whereby said band absorbs moisture as it passes through the fountain and supplies the same to the distributing roller, and means automatically maintaining the liquid in the fountain at a predetermined level.

10. In a dampening device, a distributing roller, an endless cloth band in the form of an elongated loop having movement at a constant speed, said roller contacting the band at a point intermediate the respective loop portions of the band, and means immersing said band in water in advance of its contact with said roller, said means being adjustable so that the extent of immersion of said band can be varied to vary the amount of moisture supplied to the roller by said band.

11. In a dampening device, a distributing roller, an endless cloth band in the form of an elongated loop having movement at a constant speed, said roller contacting the band at a point intermediate the respective loop portions of the band,

a fountain having one end of the band passing through the water therein, whereby said end is immersed in water in advance of the contact of said band with the roller, and means varying the extent of immersion of said band to vary the amount of moisture supplied to the roller by said band.

12. In a dampening device, a distributing roller, an endless cloth band in the form of an elongated loop having movement at a constant speed, said roller contacting the band at a point intermediate the respective loop portions of the band, a water fountain located below the distributing roller and having one end of the band passing through the water therein, whereby said end is immersed in water in advance of the contact of said band with the roller, and means automatically maintaining the water in the fountain at a predetermined level.

13. In a dampening device, a distributing roller, an endless cloth band in the form of an elongated loop having movement at a constant speed, said roller contacting the band at a point intermediate the respective loop portions of the band, a water fountain, a supporting roller journalled in the fountain and having one end of the band in contact therewith, whereby said end is immersed in water in advance of the contact of said band with the roller, and adjustable means adapted to vary the level of the liquid in the fountain.

ARTHUR B. MITCHELL.