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(54) **Apparatus for preventing undesired fluid flow past a flow control location.**

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Description

Background of the Invention

Technical Field

Generally, the present invention relates to controlling fluid flow at a flow control location, and is particularly directed to an apparatus for use in applying a dampening fluid to a printing plate which receives ink and dampening fluid according to the preamble of claim 1.

Background Art

A dampening system for a printing press typically includes a plurality of rollers for transferring dampening fluid to a printing plate during operation of the printing press. The printing plate is secured to a plate cylinder of the printing press. One of the plurality of rollers is a pan roller rotatable about its longitudinal central axis. Another one of the plurality of rollers is a slip roller rotatable about its longitudinal central axis and located adjacent to the pan roller. A nip is formed between the two rollers along the axial extent of the two rollers. The nip has a fluid entrance side at which fluid enters the nip and a fluid exit side from which fluid flows from the nip.

During operation of the printing press, the pan roller rotates about its longitudinal central axis in one direction while the slip roller rotates about its longitudinal central axis in the opposite direction. Thus, at the nip between the two rollers, the pan and slip rollers rotate in the same direction. The pan roller is partially immersed in a supply of dampening fluid, and the dampening fluid adheres to the outer surface of the pan roller as the pan roller rotates. The fluid is carried on the outer surface of the pan roller to the entrance side of the nip. Thus, the fluid enters the nip between the two rollers.

When the dampening fluid carried on the outer surface of the pan roller enters the nip between the two rollers, some of the fluid is transferred onto the outer surface of the slip roller. The fluid not transferred onto the outer surface of the slip roller remains adhered to the outer surface of the pan roller. The fluid adhering to the outer surface of the slip roller is subsequently transferred by other rollers onto the outer surface of the printing plate. The fluid which remains adhered to the outer surface of the pan roller is carried back to the supply of dampening fluid.

As known in the art, it is desirable to control the amount of fluid transferred to the outer surface of the printing plate. One way to control the amount of fluid transferred to the printing plate is to control the rotational speed of the pan roller and the rotational speed of the slip roller. An increase in the speed of each of the rollers increases the amount of fluid transferred to the printing plate. Likewise, a decrease in speed of each of the rollers decreases the amount of fluid transferred to the printing plate. Another way to control the amount of fluid transferred to the printing plate is to skew one of the two rollers along the axial extent of the two rollers. Still another way is to increase or decrease the pressure between the two rollers at the nip. Thus, the nip is a flow control location in the dampening system.

If the amount of fluid carried on the outer surface of the pan roller to the entrance side of the nip exceeds the amount of fluid flowing out of the nip at the exit side of the nip, a buildup of excess fluid at the entrance side of the nip occurs. The excess fluid at the entrance side of the nip tends to flow to the opposite axial ends of the nip. Although some of the excess fluid drips from the opposite axial ends of the pan roller back into the fluid pan due to gravity, some of the excess fluid may flow around the opposite axial ends of the nip (the flow control location) and onto the slip roller. Some of the fluid transferred onto the slip roller in this manner is subsequently transferred to the printing plate. This fluid flow around the opposite axial ends of the nip onto the slip roller is undesirable because such flow is uncontrolled and unintended.

Document FR-A-2 196 249 discloses an apparatus according to the preamble of the claim 1. However, in this document, there is no teaching of using only a collar for carrying dampening fluid directly back to the source of dampening fluid.

The Document US-A-2 275 514 discloses a structure for applying ink in which a ring is arranged at an end of a roller and extends into a recess located in another roller. The ring acts to (1) seal the ends of the rollers against leaking of ink at the point where the rollers meet, (2) obstruct the lateral spreading of ink adjacent the end of the roller, and (3) carry the lateral spread ink around to a location where it is scraped from the ring. Scraper members are used to remove the ink off the ring. The ink scraped off the ring is directed into an ink-well.

Summary of the Invention

The present invention provides an apparatus for controlling fluid flow at a flow control location between two rollers. The apparatus includes means connected at the opposite axial ends of one of the rollers for preventing undesired fluid flow past the flow control location. The apparatus of the present invention is particularly suitable for use in a dampening system of a printing press.

The apparatus includes a pan roller having a collar fixedly connected at each of the opposite axial ends of the pan roller. The pan roller is partially immersed in a fluid pan filled with dampening fluid. The pan roller is disposed adjacent to a slip roller to form a nip between the pan roller and the slip roller. The nip has an entrance side and an exit side and extends along the axial direction of the pan and slip rollers. The slip roller is disposed adjacent to a vibrator roller which, in turn, is disposed adjacent to a form roller. The form roller is disposed adjacent to a printing plate secured to a plate cylinder of a printing press. The rollers are rotatable about their longitudinal central axes.

The pan roller is rotated about its longitudinal central axis to carry fluid on its outer surface from the fluid pan to the entrance side of the nip. The fluid at the nip is either transferred onto the outer surface of the slip roller or remains adhered to the outer surface of the pan roller. The fluid on the outer surface of the pan roller is carried back into the fluid pan. The fluid transferred onto the outer surface of the slip roller is subsequently transferred to the printing plate.

In the event of an excess fluid condition at the entrance side of the nip, the excess fluid tends to flow to the opposite axial ends of the nip. When the excess fluid reaches the ends of the nip, some of this fluid drips back into the fluid pan due to gravity. In accordance with the present invention, some of the excess fluid is prevented from flowing around the opposite axial ends of the nip onto the slip roller by the collars at the opposite axial ends of the pan roller. The two collars rotate with the pan roller about the longitudinal central axis of the pan roller. Thus, the two collars pick up excess fluid at the opposite axial ends of the nip and move the excess fluid away from the slip roller. This fluid is transferred back into the fluid pan by rotation of the collars with the pan roller. By preventing the excess fluid at the entrance of the nip from flowing around the opposite axial ends of the nip onto the slip roller, accurate control of the amount of fluid transferred to the printing plate is maintained.

Brief Description of the Drawings

Further features of the present invention will become apparent to those skilled in the art to which the present invention relates from reading the following specification with reference to the accompanying drawings, in which:

Fig. 1 is a schematic illustration of a dampening system for a printing press and constructed in accordance with the present invention;

Fig. 2 is a schematic perspective view of a portion of the dampening system shown in Fig. 1 illustrating the relationship between two rollers and a flow control location between the two rollers;

Fig. 3 is an enlarged, partial schematic illustration of Fig. 2 taken approximately along line 3-3 of Fig. 2 illustrating the manner in which dampening fluid is transferred from one roller to the other roller; and

Fig. 4 is an enlarged, side view of Fig. 2 taken approximately along line 4-4 of Fig. 2 further illustrating the relationship between the two rollers and the flow control location between the two rollers.

Description of a Preferred Embodiment

The present invention relates to a fluid flow control apparatus for preventing undesired transfer of a fluid past a flow control location. The application and construction of the apparatus of the present invention may vary. The apparatus of the present invention is particularly suitable for use in a dampening system of a printing press and will be described herein as applied thereto.

A dampening system for use in a printing press, constructed in accordance with the present invention, is illustrated in Fig. 1. The dampening system 10 includes a pan roller 12 partially immersed in a fluid pan 14 filled with a dampening solution. A typical dampening solution includes water, alcohol, and gum arabic.

Referring to Figs. 1 through 4, the pan roller 12 is rotatable about its longitudinal central axis 25 and has a cylindrical outer surface. The longitudinal central axis 25 of the pan roller 12 lies on a vertical line 19. The outer surface of the pan roller 12 as is conventional is made of a chrome material. The pan roller 12 is located adjacent to a slip roller 16. The slip roller 16 is rotatable about its longitudinal central axis 27 and has a cylindrical outer surface. A line 21 extends through the longitudinal central axis 27 of the slip roller 16 and the longitudinal central axis 25 of the pan roller 12. The position of the slip roller 16 relative to the position of the pan roller 12 is such that the lines 19 and 21 intersect to form a predetermined angle therebetween. The outer surface of the slip roller 16 as is conventional is made of a rubber material.

A nip 18 is formed between the pan roller 12 and the slip roller 16 along the axial extent of the two rollers 12, 16. The nip 18 has a fluid entrance side 11 and a fluid exit side 13. The entrance side 11 of the nip 18 and the exit side 13 of the nip 18 are located on opposite sides of the line 21. One side of the line 21 is at a higher elevation than the other side of the line 21. The entrance side 11 of the nip 18 is on the side of the line 21 at the higher elevation. The exit side 13 of the nip is on the side of the line 21 at the lower elevation.

The slip roller 16 is located adjacent to a vibrator roller 20. The vibrator roller 20, in turn, is located adjacent to a form roller 22. The vibrator roller 20 and the form roller 22 have cylindrical outer surfaces and are rotatable about their respective longitudinal central axes. The form roller 22 is disposed adjacent to a printing plate 23 secured to a printing plate cylinder 24 of the printing press.

During operation of the printing press, the pan roller 12 rotates about its longitudinal central axis 25 in one direction, while the slip roller 16 rotates about its longitudinal central axis 27 in the opposite direction. As shown in Figs. 1, 2 and 3, the pan roller 12 is rotating in the clockwise direction and the slip roller 16 is rotating in the counterclockwise direction. Thus, the pan and slip rollers 12, 16 rotate in the same direction at the nip 18 between the pan roller 12 and the slip roller 16. Since the pan roller 12 is partially immersed in the fluid pan 14, the dampening fluid in the fluid pan 14 adheres to the outer surface of the pan roller 12 as the pan roller 12 rotates about its longitudinal central axis 25. The fluid adheres to the outer surface of the pan roller 12 because of the affinity between the fluid and the chrome outer surface of the pan roller 12.

Referring to Figs. 3 and 4, the fluid is carried on the outer surface of the pan roller 12 from the fluid pan 14 to the entrance side 11 of the nip 18 between the pan roller 12 and the slip roller 16. The fluid at the entrance side 11 of the nip 18 moves through the nip 18 to the exit side 13 of the nip 18 as the two rollers 12, 16 continue to rotate about their longitudinal central axes 25, 27. Since the entrance side 11 of the nip 18 is at a higher elevation than the exit side 13 of the nip 18, gravity assists in the movement of the fluid through the nip 18.

As the fluid moves through the nip 18 to the exit side 13 of the nip 18, some of the fluid is transferred from the outer surface of the pan roller 12 onto the outer surface of the slip roller 16. This transfer occurs because the affinity between the fluid and the rubber outer surface of the slip roller 16 is greater than the affinity between the fluid and the chrome outer surface of the pan roller 12. The fluid not transferred onto the outer surface of the slip roller 16 remains adhered to the outer surface of the pan roller 12. The fluid which remains adhered to the outer surface of the pan roller 12 is carried back to the fluid pan 14.

Referring to Figs. 1 and 4, as the slip roller 16 continues to rotate about its longitudinal central axis 27, the fluid carried on the outer surface of the slip roller 16 is transferred onto the outer surface of the vibrator roller 20. The vibrator roller 20, in turn, transfers the fluid on its outer surface to the outer surface of the form roller 22. In the same manner, the fluid carried on the outer surface of the form roller 22 is transferred onto the outer surface of the printing plate 23. Thus, the pan roller 12, the slip roller 16, the vibrator roller 20, and the form roller 22 of the dampening system 10 cooperate together to transfer fluid from the fluid pan 14 to the outer surface of the printing plate 23 secured to the plate cylinder 24 of the printing press.

The amount of fluid transferred from the fluid pan 14 to the printing plate 23 can be varied. One way to vary the amount of fluid transferred from the fluid pan 14 to the printing plate 23 is to change the rotational speed of either the pan roller 12 or the slip roller 16. A speed control mechanism 38, as known in the art, for varying the rotational speed of either the pan roller 12 or the slip roller 16 is operatively connected to the two rollers 12, 16 as schematically illustrated in Fig. 1. The speed control mechanism 38 can be one of a multitude of conventional designs. Thus, details of its construction will not be discussed. An increase in the speed of either of the two rollers 12, 16 increases the amount of fluid transferred to the printing plate 23. A decrease in the speed of either of the two rollers 12, 16 decreases the amount of fluid transferred to the printing plate 23.

Another way to control the amount of fluid transferred from the fluid pan 14 to the printing plate 23 is to skew the pan roller 12 relative to the slip roller 16 along the axial extent of the two rollers 12, 16. When the two rollers 12, 16 are skewed, the contact pressure between the two rollers 12, 16 changes. An increase in the contact pressure between the two rollers 12, 16 decreases the amount of fluid transferred from the fluid pan 14 to the printing plate 23. A decrease in the contact pressure, up to a certain point, increases the amount of fluid transferred from the fluid pan 14 to the printing plate 23.

The amount of fluid transferred from the fluid pan 14 to the printing plate 23 can also be controlled by varying the size of the nip 18 between the pan roller 12 and the slip roller 16. The contact pressure between the two rollers 12, 16 varies as a function of the size of the nip 18 between the two rollers 12, 16. The amount of fluid transferred from the pan roller 12 to the slip roller 16 varies as a function of the contact pressure between the two rollers 12, 16 in the manner as described hereinabove. An adjustment mechanism 40, as known in the art, for adjusting the size of the contact area between the pan roller 12 and the slip roller 16 is operatively connected to the two rollers 12, 16 as schematically illustrated in Fig. 1. The adjustment mechanism 40 can be one of a multitude of conventional designs. Thus, details of its construction will not be discussed.

The fluid in the nip 18 is either transferred onto the outer surface of the slip roller 16 or remains adhered to the outer surface of the pan roller 12 as the two rollers 12, 16 continue to rotate about their longitudinal central axes 25, 27. The amount of fluid flowing out of the nip 18 at the exit side 13 of the nip 18 is the sum of the amount of fluid on the outer surface of the pan roller 12 and the amount of fluid on the outer surface of the slip roller 16. A buildup of excess fluid at the entrance side 11 of the nip 18 occurs if the amount of fluid transferred from the fluid pan 14 to the entrance side 11 of the nip 18 exceeds the amount of fluid flowing out of the nip 18 at the exit side 13 of the nip 18.

If an excess fluid condition occurs, the excess fluid which builds up at the entrance side 11 of the nip 18 tends to flow to the opposite axial ends of the nip 18. Most of the excess fluid flowing to the opposite axial ends of the nip 18 eventually flows off the opposite axial ends of the pan roller 12 back into the fluid pan 14. Some of the excess fluid at the opposite axial ends of the nip 18 tends to flow around the opposite axial ends of the nip 18 onto the slip roller 16. This tendency occurs because of the greater affinity between the fluid and rubber outer surface of the slip roller 16 relative to the affinity between the fluid and chrome outer surface of the pan roller 12, and the flow characteristics of the dampening solution.

The flow of excess fluid at the entrance side 11 of the nip 18 around the opposite axial ends of the nip 18 onto the slip roller 16 is undesirable. Such flow is undesirable because of its uncontrolled nature and its adverse effect on the accurate control of the amount of fluid transferred to the printing plate 23. One way to prevent this undesirable flow is to pick up the excess fluid at the opposite axial ends of the nip 18 and move the excess fluid away from the slip roller 16.

Referring to Figs. 2, 3 and 4, a collar 30 is secured to the pan roller 12 at one axial end 15 of the pan roller 12. The collar 30 is made of a brass material. The brass collar 30 has a shape like a ring with an outer diameter greater than the outer diameter of the pan roller 12. The brass collar 30 is made of two separate pieces. Each piece has a semi-circular shape and forms one-half of the brass collar 30. The two pieces are held together by suitable fasteners. When the fasteners are tightened to hold the two pieces together, the brass collar 30 is fixedly secured to the pan roller 12. As shown in Fig. 2, a brass collar 35 identical to the brass collar 30 is fixedly secured to the pan roller 12 at the other axial end 17 of the pan roller 12.

The two brass collars 30, 35 located at the two opposite axial ends 15, 17, respectively, of the pan roller 12 are used to pick up the excess fluid at the opposite axial ends of the nip 18. Since the function of each of the brass collars 30, 35 is identical to the other collar, only the brass collar 30 at the one axial end 15 of the pan roller 12 will be described in detail. The affinity between the fluid and the brass collar 30 located at the axial end 15 of the pan roller 12 is greater than the affinity between the fluid and the rubber outer surface of the slip roller 16. This greater affinity between the fluid and the brass collar 30 tends to pick up the excess fluid at the axial end of the nip 18 as the brass collar 30 rotates with the pan roller 12. As the brass collar 30 continues to rotate with the pan roller 12, the fluid picked up by the brass collar 30 moves away from the slip roller 16 and back to the fluid pan 14. Thus, the excess fluid at the axial end of the nip 18 is picked up and moved away from the slip roller 16. By preventing the excess fluid at the axial end of the nip 18 from flowing onto the slip roller 16 in this manner, accurate control of the amount of fluid transferred to the printing plate 23 is maintained.

The preferred embodiment described hereinbefore includes the pair of collars 30, 35 in which the collars are disposed at the opposite axial ends 15, 17 of the pan roller 12. However, it is contemplated that the two collars 30, 35 could instead be disposed at the opposite axial ends of the slip roller 16. Furthermore, it is conceivable that only one collar be used instead of two collars. Thus, if one collar is used, the collar would be disposed at one axial end of either the pan roller 12 or the slip roller 16.

Claims

1. An apparatus for use in applying a dampening fluid to a printing plate (23) which receives ink and dampening fluid comprising, a source (14) of dampening fluid, a first roller (12) rotatable about its longitudinal central axis (25) and having an outer cylindrical surface for receiving dampening fluid from said source (14), a second roller (16) rotatable about its longitudinal central axis (27) and having an outer cylindrical surface, the outer surface of said second roller (16) and the outer surface of said first roller (12) defining a nip (18) between said first and second rollers, dampening fluid being transferable at said nip (18) from the outer surface of said first roller (12) to the outer surface of said second roller (16), said nip (18) having an entrance side (11) at which said first roller (12) carries dampening fluid to said nip (18) and an exit side (13) at which said first and second rollers (12, 16) carry dampening fluid away from said nip (18), an excess fluid condition being formed at the entrance side (11) of said nip (18) if the amount of dampening fluid car-

ried to said nip (18) exceeds the amount of dampening fluid said first and second rollers (12, 16) carry away from said nip (18), and means for preventing fluid flow of the excess dampening fluid at the entrance side (11) of said nip (18) around the one axial end of said nip (18) to the exit side (13) of said nip (18), characterized in that said means consist only of one or two collars (30, 35) disposed at one axial end or both axial ends, respectively, of said nip (18) on said first roller (12) and rotatable therewith for transferring excess dampening fluid from the entrance side (11) of said nip (18) directly back to said source (14).

2. The apparatus of claim 1 further including means (38) operatively connected with said first and second rollers (12, 16) for controlling the rotational speed of said first roller about its longitudinal central axis (25) and the rotational speed of said second roller about its longitudinal central axis (27).

3. The apparatus of claim 1 further including means (40) operatively connected with said first and second rollers (12, 16) for adjusting the contact pressure at the nip (18) between said first and second rollers.

4. The apparatus of claim 1 wherein a first axis (19) extends vertically and perpendicularly through the longitudinal central axis (25) of said first roller (12) and a second axis (21) extends perpendicularly through the longitudinal central axis of said first roller and the longitudinal central axis (27) of said second roller (16), the first and second axes intersecting to form a predetermined angle therebetween, the entrance and exit sides (11, 13) of said nip (18) being disposed on opposite sides of the second axis, the entrance side (11) of said nip (18) being at a higher vertical elevation than the exit side (13) of said nip (18).

5. The apparatus of claim 1 wherein said collar (30) has a cylindrical ring shape.

6. The apparatus of claim 1 wherein the outer diameter of said collar (30) is greater than the outer diameter of said first roller (12) on which said collar is disposed.

7. The apparatus of claim 1 wherein said collar (30) is made of a brass material.

8. The apparatus of claim 1 further including another collar (35) disposed at the other axial end of said nip (18) and on said first roller (12), each of said collars (30, 35) having a cylindrical ring shape.

9. The apparatus of claim 8 wherein the outer diameter of each of said collars (30, 35) is greater than the outer diameter of said first roller (12).

10. The apparatus of claim 8 wherein each of said collars (30, 35) is made of a brass material.

Patentansprüche

1. Einrichtung zum Gebrauch beim Auftragen von Feuchtwasser auf eine Druckplatte (23), welche Druckfarbe und Feuchtwasser aufnimmt, mit einer Feuchtwasserquelle (14), einer ersten Walze (12), welche um ihre Längsmittelachse (25) drehbar ist und eine zylindrische Aussenfläche zur Aufnahme von Feuchtwasser aus der genannten Feuchtwasserquelle (14) hat, und einer zweiten Walze (16), welche um ihre Längsmittelachse (27) drehbar ist und eine zylindrische Aussenfläche hat, wobei die Aussenfläche der zweiten Walze (16) und die Aussenfläche der ersten Walze (12) einen Walzenspalt (18) zwischen den beiden Walzen definieren, an dem Feuchtwasser von der Aussenfläche der ersten Walze (12) an die Aussenfläche der zweiten Walze (16) übertragbar ist, wobei ferner der Walzenspalt (18) eine Eintrittsseite (11) aufweist, an welcher die erste Walze (12) dem Walzenspalt (18) Feuchtwasser zuführt, sowie eine Austrittsseite (13), an welcher die ersten und zweiten Walzen (12, 16) Feuchtwasser von dem Walzenspalt (18) wegführen, und wobei an der Eintrittsseite (11) des Walzenspalts (18) ein Überschuss an Feuchtwasser entsteht, wenn die Menge des dem Walzenspalt (18) zugeführten Feuchtwassers die Menge des von den beiden Walzen (12, 16) vom Walzenspalt (18) weggeführten Feuchtwassers übersteigt, ferner mit Mitteln, welche verhindern, dass vom überschüssigen Feuchtwasser an der Eintrittsseite (11) des genannten Walzenspalts (18) Feuchtwasser um das eine axiale Ende des Walzenspalts (18) herum zur Austrittsseite (13) des Walzenspalts (18) gelangt, dadurch gekennzeichnet, dass die genannten Mittel aus einem oder zwei Kragen (30, 35) bestehen, welcher bzw. welche an einem bzw. an beiden axialen Enden des Walzenspalts (18) auf der ersten Walze (12) angeordnet und mit dieser drehbar ist bzw. sind, um überschüssiges Feuchtwasser an der Eintrittsseite (11) des Walzenspalts (18) direkt zur genannten Feuchtwasserquelle (14) zurückzu-

führen.

2. Einrichtung nach Anspruch 1, dadurch gekennzeichnet, dass Mittel (38) zur Steuerung der Rotationsgeschwindigkeit der um ihre Längsmittelachse (25) rotierenden ersten Walze (12) und der Rotationsgeschwindigkeit der um ihre Längsmittelachse (27) rotierenden zweiten Walze (16) mit den beiden Walzen (12, 16) betrieblich verbunden sind.

3. Einrichtung nach Anspruch 1, dadurch gekennzeichnet, dass Mittel (40) zur Einstellung des Kontaktdrucks am Walzenspalt (18) zwischen der ersten und der zweiten Walze (12, 16) mit den beiden Walzen betrieblich verbunden sind.

4. Einrichtung nach Anspruch 1, dadurch gekennzeichnet, dass eine erste Axe (19) vertikal und senkrecht durch die Längsmittelachse (25) der ersten Walze (12) und eine zweite Axe (21) senkrecht durch die Längsmittelachse der ersten Walze (12) und die Längsmittelachse (27) der zweiten Walze (16) verläuft, dass sich die beiden Axen schneiden und einen vorbestimmten Winkel zwischen sich bilden, und dass die Eintritts- und Austrittsseiten (11, 13) des Walzenspalts (18) auf entgegengesetzten Seiten der zweiten Axe (21) angeordnet sind, so dass sich die Eintrittsseite (11) des Walzenspalts (18) auf einem höheren Niveau befindet als die Austrittsseite (13) des Walzenspalts (18).

5. Einrichtung nach Anspruch 1, dadurch gekennzeichnet, dass der genannte Kragen (30) die Form eines zylindrischen Ringes hat.

6. Einrichtung nach Anspruch 1, dadurch gekennzeichnet, dass der Aussendurchmesser des genannten Kragens (30) grösser ist als der Aussendurchmesser der genannten ersten Walze (12), auf welcher dieser Kragen angeordnet ist.

7. Einrichtung nach Anspruch 1, dadurch gekennzeichnet, dass der genannte Kragen (30) aus Messing hergestellt ist.

8. Einrichtung nach Anspruch 1, dadurch gekennzeichnet, dass am anderen axialen Ende des Walzenspalts (18) ein weiterer Kragen (35) auf der genannten ersten Walze (12) angeordnet ist und dass jeder der Kragen (30, 35) die Form eines zylindrischen Ringes hat.

9. Einrichtung nach Anspruch 8, dadurch gekennzeichnet, dass der Aussendurchmesser jedes der genannten Kragen (30, 35) grösser ist als der Aussendurchmesser der genannten ersten Walze (12).

10. Einrichtung nach Anspruch 8, dadurch gekennzeichnet, dass jeder der genannten Kragen (30, 35) aus Messing hergestellt ist.

Revendications

1. Dispositif destiné à être utilisé pour appliquer un fluide d'humectation à une plaque d'impression (23) qui reçoit de l'encre et du fluide d'humectation comprenant une source (14) de fluide d'humectation, un premier rouleau (12) pouvant tourner sur son axe central longitudinal (25) et présentant une surface extérieure cylindrique pour recevoir du fluide d'humectation provenant de ladite source (14), un deuxième rouleau (16) pouvant tourner sur son axe central longitudinal (27) et présentant une surface extérieure cylindrique, la surface extérieure dudit deuxième rouleau (16) et la surface extérieure dudit première rouleau (12) définissant une ligne de contact (18) entre lesdits premier et deuxième rouleaux, du fluide d'humectation pouvant être transféré au niveau de ladite ligne de contact (18) de la surface extérieure dudit premier rouleau (12) à la surface extérieure dudit deuxième rouleau (16), ladite ligne de contact (18) présentant un côté d'entrée (11) auquel ledit premier rouleau (12) transporte du fluide d'humectation jusqu'à ladite ligne de contact (18) et un côté de sortie (13) auquel lesdits premier et deuxième rouleaux (12, 16) transportent du fluide d'humectation en s'éloignant de ladite ligne de contact (18), un excès de fluide se produisant au côté d'entrée (11) de ladite ligne de contact (18) si la quantité de fluide d'humectation transportée jusqu'à ladite ligne de contact (18) excède la quantité de fluide d'humectation que lesdits premier et deuxième rouleaux (12, 16) emmènent à partir de ladite ligne de contact (18), et des moyens pour empêcher l'écoulement de fluide du fluide d'humectation en excès au côté d'entrée (11) de ladite ligne de contact (18) sur l'une des extrémités axiales de ladite ligne de contact (18) jusqu'au côté de sortie (13) de ladite ligne de contact (18), caractérisé en ce que lesdits moyens sont constitués uniquement d'un ou de deux colliers (30, 35) disposés à ladite extrémité axiale ou aux deux extrémités axiales, respectivement, de ladite ligne de contact (18) sur ledit premier rouleau (12) et pouvant tourner avec eux pour faire retourner le fluide d'humectation en excès du côté d'entrée (11) de ladite ligne de contact (18) directement à ladite source (14).

2. Dispositif selon la revendication 1, comprenant en outre des moyens (38) reliés en fonctionnement auxdits premier et deuxième rouleaux (12, 16) pour commander la vitesse de rotation dudit premier rouleau sur son axe central longitudinal (25) et la vitesse de rotation dudit deuxième rouleau sur son axe central longitudinal (27).

3. Dispositif selon la revendication 1, comprenant en outre des moyens (40) reliés en fonctionnement auxdits premier et deuxième rouleaux (12, 16) pour régler la pression de contact au niveau de la ligne de contact (18) entre lesdits premier et deuxième rouleaux.

4. Dispositif selon la revendication 1, dans lequel un premier axe (19) s'étend verticalement et croise perpendiculairement l'axe central longitudinal (25) dudit premier rouleau (12) et un deuxième axe (21) croise perpendiculairement l'axe central longitudinal dudit premier rouleau et l'axe central longitudinal (27) dudit deuxième rouleau (16), les premier et deuxième axes se coupant sous un angle prédéterminé, les côtés d'entrée et de sortie (11, 13) de ladite ligne de contact (18) étant disposés sur les côtés opposés du deuxième axe, le côté d'entrée (11) de ladite ligne de contact (18) étant à une hauteur verticale plus élevée que le côté de sortie (13) de ladite ligne de contact (18).

5. Dispositif selon la revendication 1, dans lequel ledit collier (30) a une forme d'anneau cylindrique.

6. Dispositif selon la revendication 1, dans lequel le diamètre extérieur dudit collier (30) est supérieur au diamètre extérieur dudit premier rouleau (12) sur lequel est disposé ledit collier.

7. Dispositif selon la revendication 1, dans lequel ledit collier (30) est réalisé dans un matériau de laiton.

8. Dispositif selon la revendication 1, comprenant en outre un autre collier (35) disposé à l'autre extrémité axiale de ladite ligne de contact (18) et sur ledit premier rouleau (12), chacun desdits colliers (30, 35) ayant une forme d'anneau cylindrique.

9. Dispositif selon la revendication 8, dans lequel le diamètre extérieur de chacun desdits colliers (30, 35) est supérieur au diamètre extérieur dudit rouleau (12).

10. Dispositif selon la revendication 8, dans lequel chacun desdits colliers (30, 35) est réalisé dans un matériau de laiton.

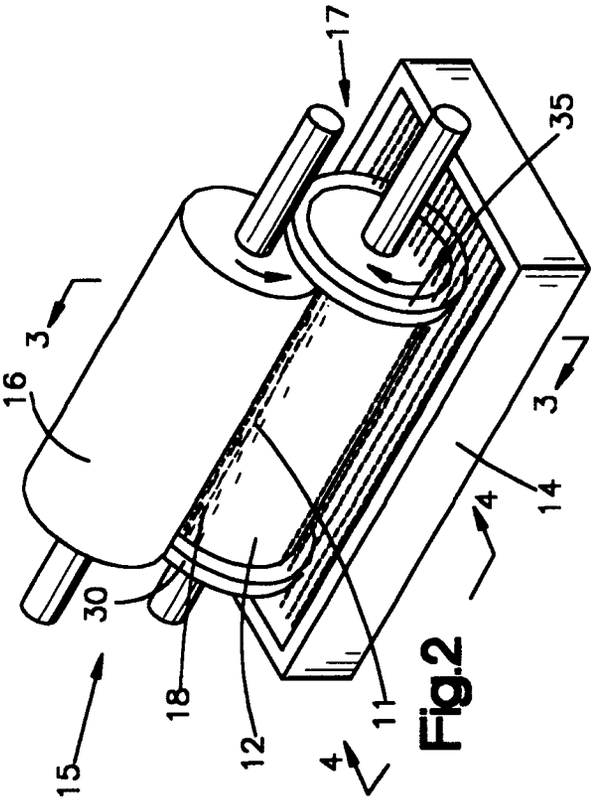

Fig.2

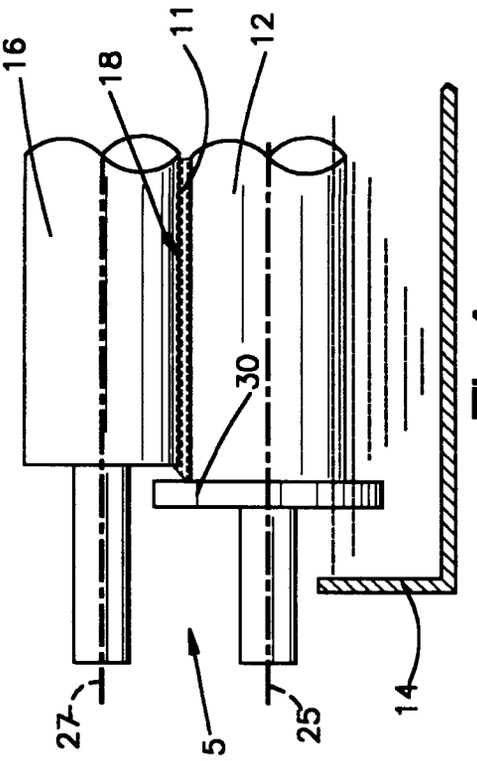

Fig.4

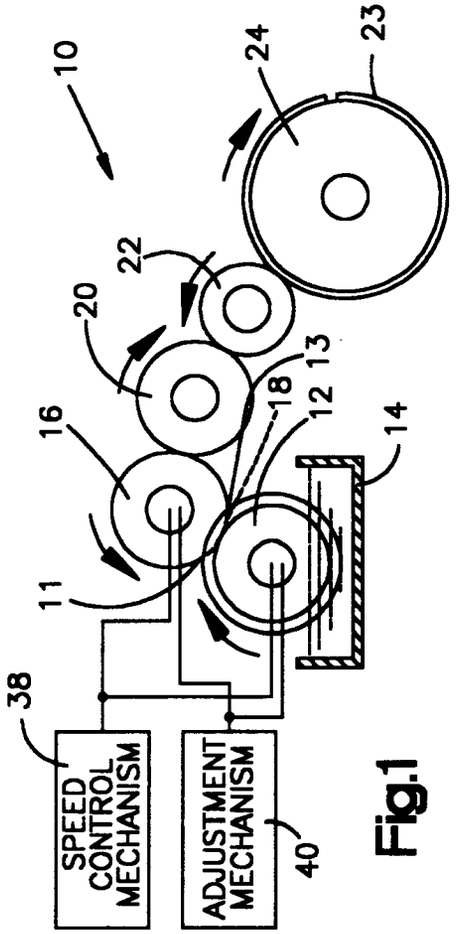

Fig.1

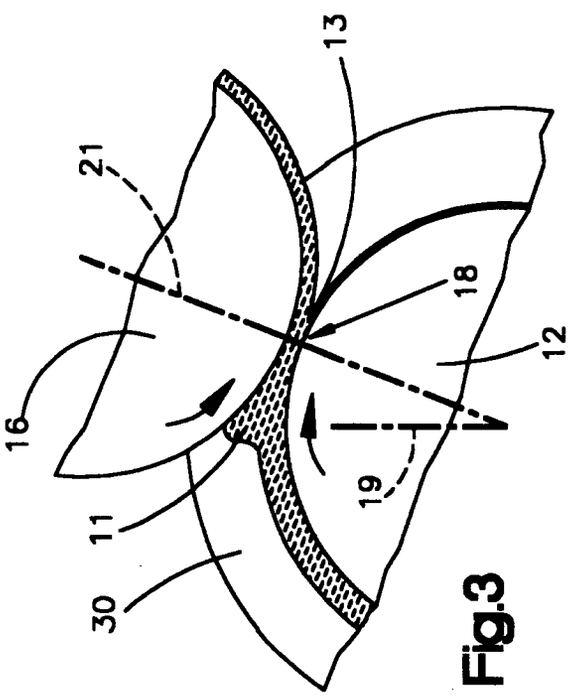

Fig.3