

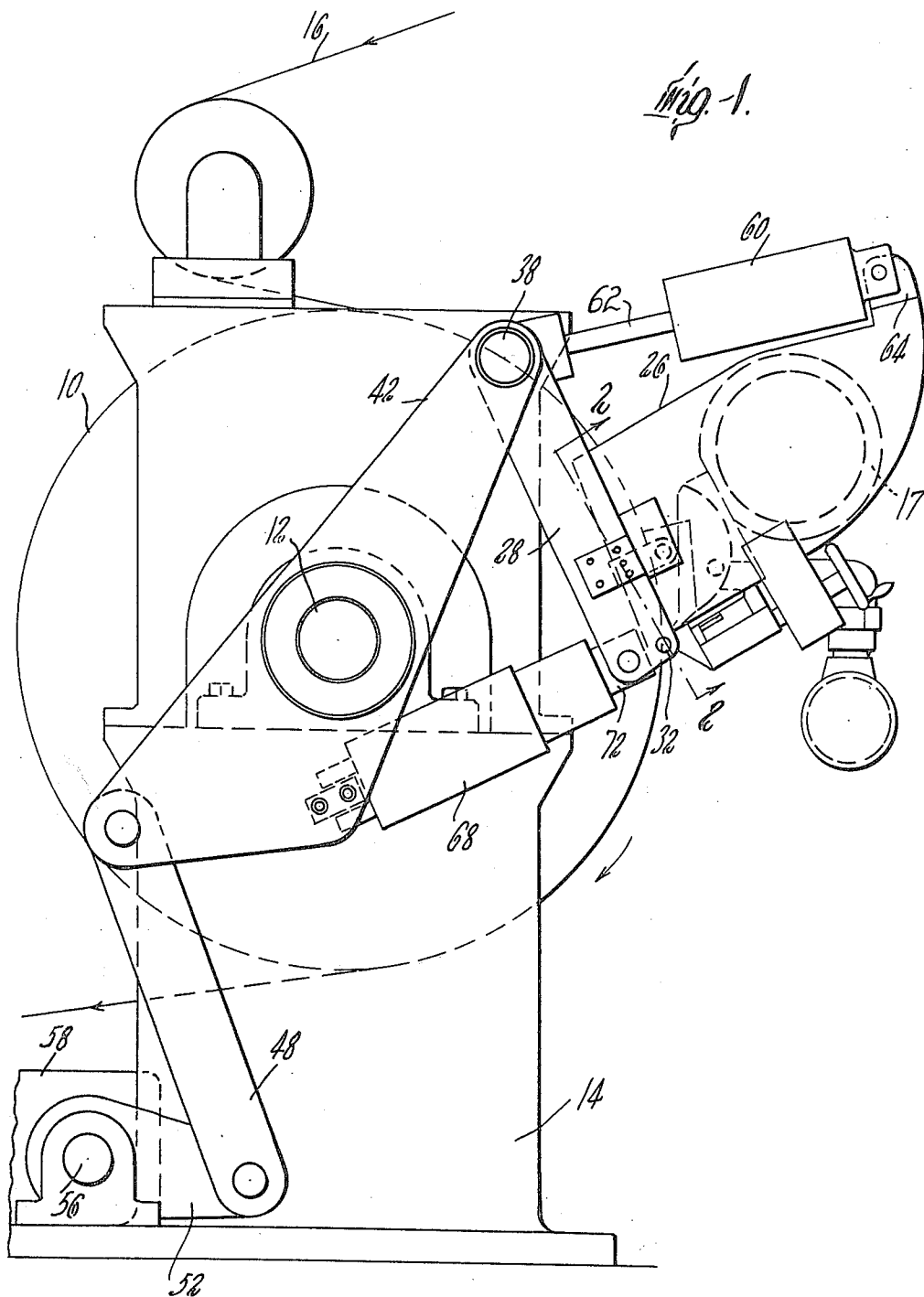
Feb. 9, 1965

G. KRIKORIAN
TRAILING BLADE COATER

3,169,082

Filed May 28, 1962

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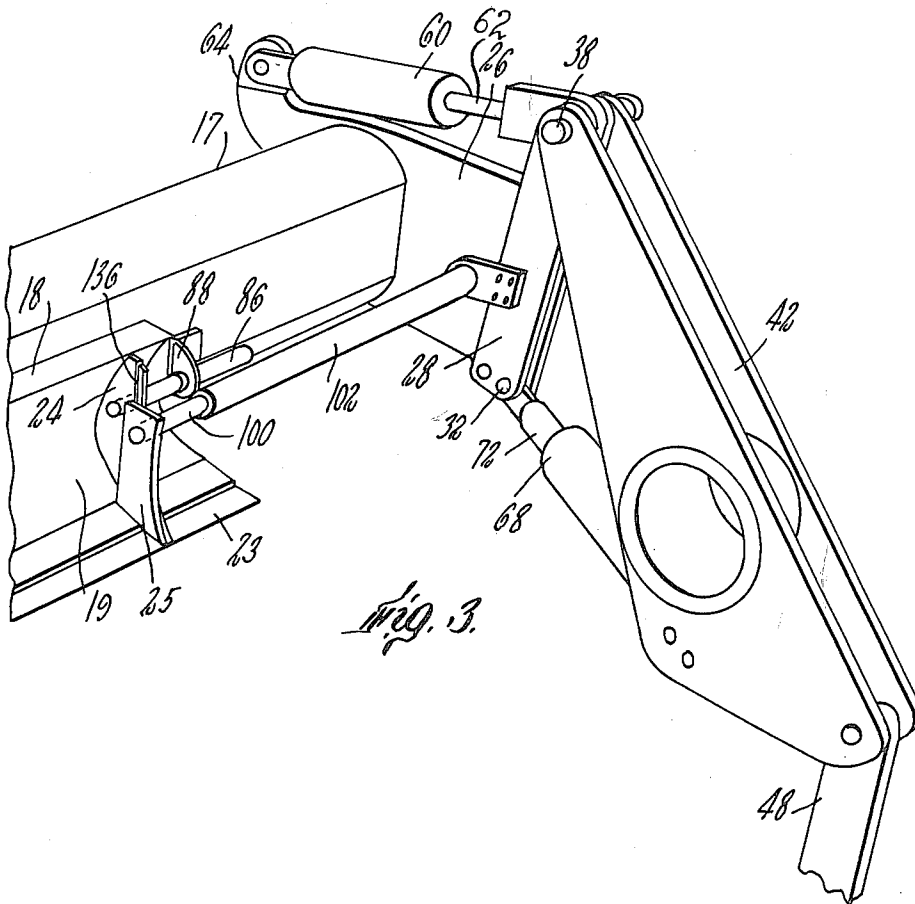
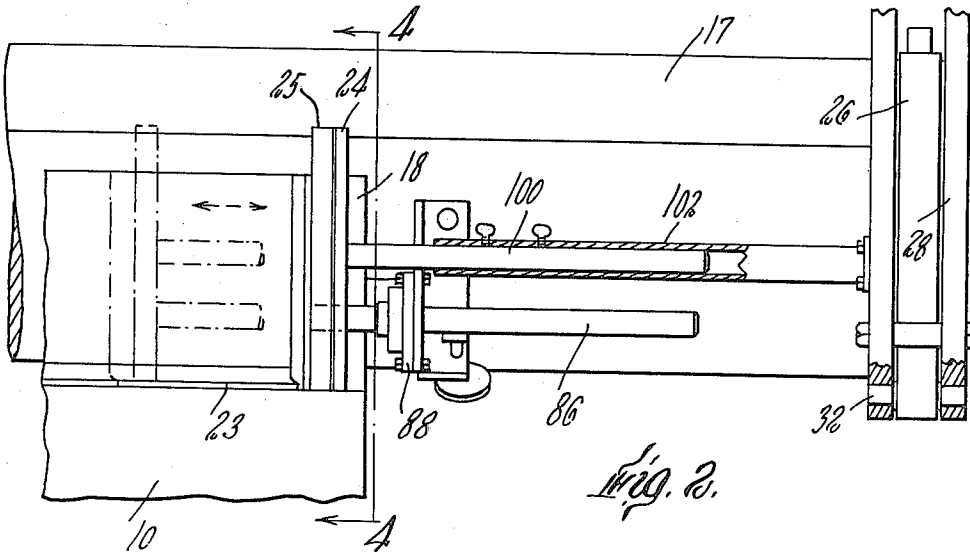
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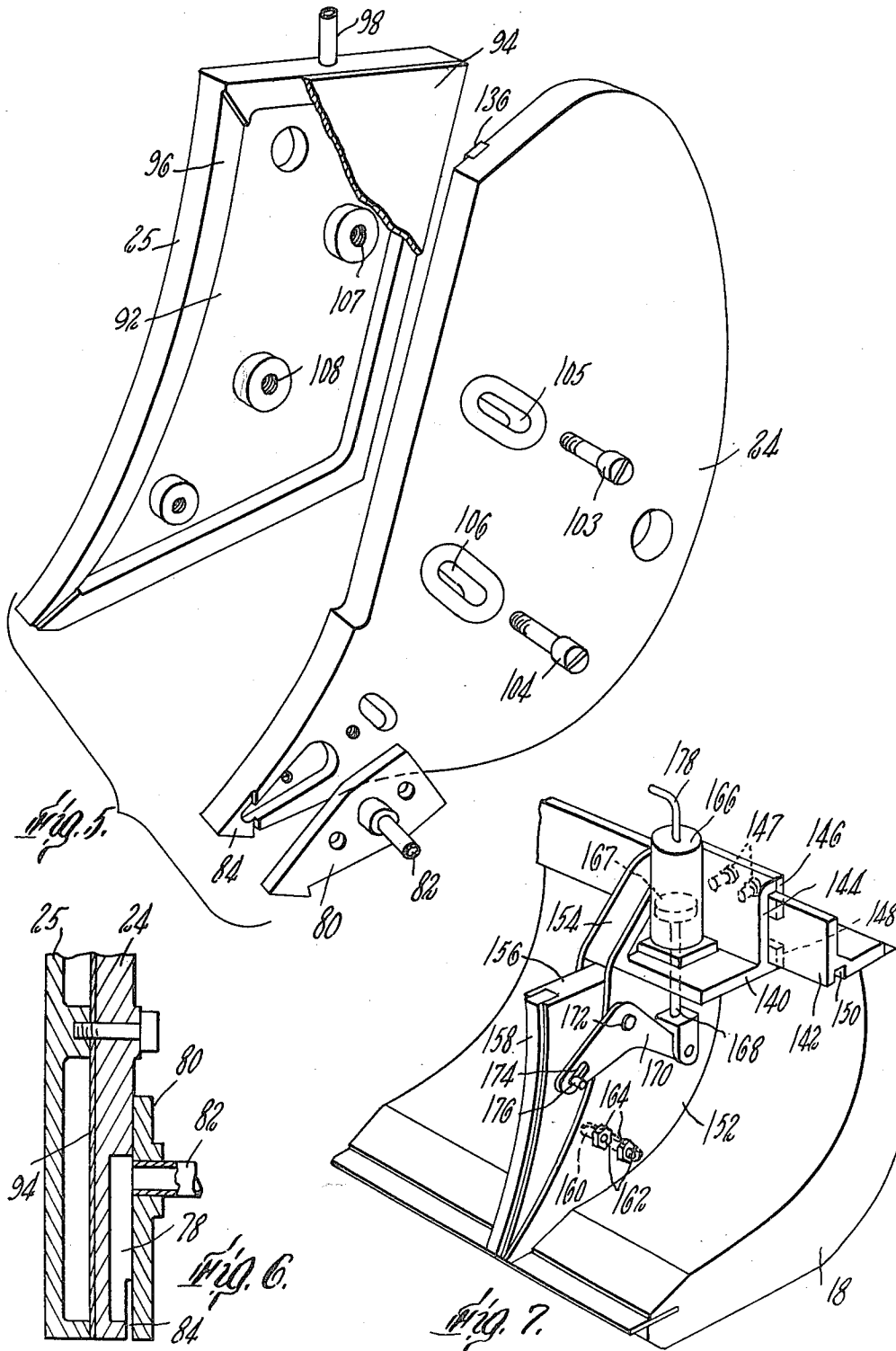
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3,169,082

TRAILING BLADE COATER

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14 Claims. (Cl. 118—413)

The present invention relates to improvements in coating machines, and more particularly to an improved doctor blade and color pond supporting assembly adapted for use in a trailing blade coating machine.

In coating machines of the general type referred to the supporting structure for the doctor blade and color pond assembly includes provision for adjustment of the doctor blade and color pond associated therewith to determine both the position and angle of the scraping edge with relation to the traveling web and backing roll. These adjustments control to a substantial degree the thickness and consistency of the applied coating. In conventional machines, however, adjustments of position and angle of the doctor blade and color pond, once made, can be altered only with considerable effort.

It is a principal object of the present invention to provide a novel and improved arrangement of the doctor blade and color pond assembly of a coating machine which is well adapted for the convenient and rapid adjustment of the doctor blade and color pond assembly either automatically or manually and, if so desired, while the machine is in operation in order to control the weight and consistency of the coating applied.

It is a further object of the invention to provide a novel and improved arrangement of the dikes provided at each end of the color pond which will provide for the automatic accommodation of said dikes to the altered cross-sectional area of said color pond which must accompany any said adjustment of said doctor blade and color pond assembly with relation to the traveling surface of the web and underlying backing roll.

Other objects of the invention are to improve the construction and arrangement of the several cooperating elements of applicant's doctor blade and color pond assembly to provide an assembly of increased stability and efficiency.

With these and other objects in view as may hereinafter appear the several features of the invention consist also in the devices, combinations and arrangement of parts hereinafter described and claimed, which together with the advantages to be obtained hereby will be readily understood by one skilled in the art from the following description taken in connection with the accompanying drawings in which:

FIG. 1 is a view in side elevation of a coating machine illustrating in a preferred form the several features of the invention;

FIG. 2 is a detail sectional view taken on a line 2—2 of FIG. 1 to illustrate particularly one of the adjustable dike assemblies associated with the color pond and doctor blade assembly;

FIG. 3 is a perspective view illustrating the dike assembly shown in FIG. 2 together with a portion of the supporting and positioning mechanism at one side of the coating machine on which the color pond and doctor blade assembly is mounted;

FIG. 4 is a sectional view taken on a line 4—4 of FIG. 2 illustrating the color pond and doctor blade assembly together with the tubular support for said assembly and one of the adjustable dike assemblies associated therewith;

FIG. 5 is an exploded perspective view of the air dike assembly associated with the near end of the color pond and doctor blade assembly as shown in FIG. 4;

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FIG. 6 is a detail sectional view of the lower end of the assembly on a line 6—6 of FIG. 4;

FIG. 7 is a detail perspective view illustrating a modified form of adjustable dike mechanism including supporting and adjusting means therefor; and

FIG. 8 is a somewhat diagrammatic perspective view of a portion of the doctor blade supporting and adjusting assembly shown in FIG. 4.

The trailing blade type coater shown in the drawings as embodying in a preferred form the several features of the invention comprises a backing roll 10 mounted on a shaft 12 which rotates in bearings provided in standards 14. The web to be coated is designated at 16 traveling in a downward clockwise direction around the backing roll 10.

In accordance with the invention the color pond and doctor blade assembly is supported with relation to the backing roll and traveling web to facilitate adjustment of the assembly both angularly and in and out with relation to the web. The supporting structure is well adapted for rapid and accurate adjustment of the doctor blade either manually or automatically by remote control, and independently of whether the machine is stopped or running.

The doctor blade and color pond assembly of the coater comprises a rigid back bone support for the assembly in the form of a heavy tubular member 17 which extends across the width of the web 16 parallel to the rotational axis of the backing roll 10. A bar 18 bolted to a flatted portion of the tubular member 17 is arranged to extend across the width of the web, and is shaped to provide a color pond for supplying a liquid coating material to the traveling web 16. In cross section, the bar 18 is formed with a flat exterior surface which faces against the flat tubular member 17, and a cylindrically shaped interior surface 19 which forms the internal face of the color pond. The bottom face of the bar 18 is also flatted to form the upper stationary jaw 20 of the doctor blade support. A movable lower jaw 22 is arranged as hereinafter more fully set forth to support a doctor blade 23 in operating position against the traveling web 16 closing the lower edge of the color pond.

Further in accordance with the invention, a novel and improved dike assembly is provided at each end of the color pond which automatically maintains a tight seal between the rear face of the color pond formed by the interior surface 19 of the bar 18 which is adjusted with the doctor blade, and the relatively stationary contour of the backing roll and web traveling thereon. Each dike assembly comprises a main dike 24 fitted to and in fixed relation to the internal face of the color pond to be movably adjusted therewith, and an auxiliary dike 25 which is held in a relatively stationary position adjacent the backing roll and web and is provided with an edge contoured to meet the peripheral surface of the backing roll.

The supporting and positioning mechanism for the color pond and doctor blade assembly for the machine is particularly shown in FIGS. 1, 2 and 3. Inasmuch as the construction and arrangement of parts is duplicated at each side of the machine, only those parts associated with one side are shown although reference in the following description is made to the identical parts provided at each side of the machine. The tubular member 17 from which the color pond and doctor blade assembly are mounted has secured to each end thereof identical end plate members 26 which are pivotally mounted on two similarly identical downwardly extending link elements 28, one said link being provided at each side of the coater. It will be noted that the pivotal bearing centers 32 on said end plate members 26 about which the entire color pond and doctor blade assembly turns are in sub-

stantial alignment with the edge of the doctor blade so that the entire assembly will at all times rock about an axis defined by the edge of the doctor blade. The link elements 28 at their upper ends are pivotally supported by means of pins 38 on two normally stationary brackets 42, one said bracket being provided at each side of the coater and pivotally mounted on the pivot shaft 12 for the backing roll 10. It will readily be appreciated that a forward and back movement of the link elements about their respective pins 38 will have the effect of moving the color pond and doctor blade assembly in an in and out direction substantially along the plane of the blade with relation to the backing roll 10 and web 16. Rotational movement of the brackets 42 about the pivot shaft 12 will have the effect of raising or lowering and thereby adjusting vertically the position of the color pond and doctor blade assembly with relation to the backing roll.

The position of the two brackets 42 is determined by linkage connections which include links 48 connected respectively with the lower ends of the brackets 42, and with transverse arms 52 secured to a rock shaft 56. The shaft 56 is in turn arranged to be operated by a motor and brake unit 53 which, when not in operation, causes rock shaft 56 to be braked and rigidly held.

A control device is shown for rocking the color pond and doctor blade assembly about an axis defined by said bearing centers 32 and scraping edge of the doctor blade which comprises a pair of pneumatic cylinders 60, one at each side of the coater, and associated pistons 62. The pistons are connected respectively to pivot pins 38, and the associated cylinders are connected respectively to lugs 64 carried on end plates 26. The in and out position of the color pond and doctor blade assembly with respect to the backing roll 10 and traveling web 16 is determined by means of a pair of pneumatic cylinders 68 which are located respectively at opposite sides of the coater and associated pistons 72. The cylinders 68 are connected respectively with brackets 42. Their associated pistons 72 are pivotally connected respectively with the lower ends of link elements 28. It will be understood that the pneumatic cylinders 68 normally operate to hold the color pond and doctor blade assembly in a position biased against the web 16 and backing roll 10. The pneumatic cylinders 68 have the further function of moving the color pond and doctor blade assembly away from the web 16 and backing roll 10 in order to facilitate servicing the assembly and the changing of worn out blades as may be necessary.

The arrangement of the linkage connections above described including the position of pivot pins 38 with relation to the doctor blade 23 is such that any in and out adjustment in the position of the doctor blade will cause the blade to move in and out directly along the plane of the blade.

The dike assemblies provided for closing the ends of the color pond in accordance with the invention comprise at each end of the color pond the dike 24 which is contoured to fit closely the interior surface 19 of the color pond bar 18, said contoured surface extending downwardly to and terminating in a tip portion which overlies the exposed portion of the doctor blade 23.

An air pocket 78 formed in the lower end or tip of the dike 24 is enclosed by means of a cover 80 having attached thereto a forced air inlet pipe 82. A very thin outlet opening 84 is provided between those portions of the cover 80 and dike 24 extending around the bottom edge of the dike opposite the opposed face of the doctor blade and an adjacent portion of the web.

The dike 24 is secured rigidly in position with relation to the color pond bar 18 by means of a rod 86 which is adjustably axially in a bracket 88 secured to the flatted face of the color pond bar 18.

The auxiliary dike 25 associated with the dike 24 comprises a plate having formed therein a large air chamber 92 and a flat cover 94 which seals in the air chamber

except for a thin opening 96 along the edge of the auxiliary dike abutting the backing roll 10 and web 16. Air under pressure is admitted to the chamber 92 by means of an air inlet pipe 98 which is connected with a port in the upper edge of the dike 25. The auxiliary dike assembly above described is mounted in a relatively stationary relation with respect to the periphery of the backing roll 10 irrespective of the adjusted position of the color pond and doctor blade assembly by means of a telescoping connection which includes a supporting rod 100 and a tubular rod 102 overlying said rod 100 and secured at its free end to the adjacent link element 28.

The dike 24 and auxiliary dike 25 are maintained in sliding contact with one another by means of two bolts 103, 104 which pass through slots 105, 106 in the dike 24 and are screw threaded for adjustment in bosses 107, 108 formed in the auxiliary dike 25.

The supporting assembly for said doctor blade 23 comprises generally the upper jaw 20 and movable lower jaw 22 above referred to. The blade 23 is mounted in a holder 110 which takes the form of a notched bar and cover plate to which the doctor blade is rigidly secured along its length. The holder 110 is mounted in the slotted upper surface of a slide bar 112 which extends along the length of the doctor blade assembly, being supported for forward and back movement between the upper jaw 20 and lower jaw 22 of the assembly. Toward its outer edge, the doctor blade is supported by means of an edge plate 114 secured to the lower jaw 22. A loose fit is provided between the upper jaw 20 and the edge plate 114 so that the doctor blade is permitted to bend downwardly under the pressure of the fluid in the color pond.

The lower jaw 22 has secured to its rear edge a longitudinally extending bar 116 formed with a series of upwardly extending hinge members which are pivotally mounted on short pivot pins 118 carried in yokes 117 secured to recessed portions of the bar 18 by means of fastening bolts 119, the arrangement being illustrated specifically in FIG. 4 and in the associated detail view FIG. 8. Rearward extensions 120 of the lower jaw 22 are arranged for engagement with an inflated tube 122 which rests against the underside of the main supporting tubular member 17 for the color pond and doctor blade assembly. The illustrated construction of the doctor blade assembly in which the lower jaw 22 is mounted on a pivot 118 located directly beneath the main tubular support 17 has the advantage that the very substantial weight of the lower jaw and the doctor blade positioning mechanism associated therewith is carried directly by the said tubular support and thus does not have any tendency to warp or strain the doctor blade out of position along the very substantial length of said assembly which may be as much as 20 feet in length. This improvement has been found to be of substantial advantage as compared with prior constructions in which the weight of the movable jaw is carried by a forwardly extending portion of the stationary jaw to prevent possible sagging of the overhanging support and a consequent dislocation in the position of the doctor blade intermediate its length. In this connection it may be noted that a deviation of the doctor blade from the normal position by an amount of as little as .002 inch will seriously affect the quality of the coating produced.

Forward and back adjustment of the doctor blade is effected by means of a plurality of adjustable couplings spaced from one another along the length of the doctor blade assembly each of which takes the form of a rod 124 secured to the slide bar 112 and screw threaded at its outer end to receive an adjusting sleeve 126 which is in turn screw threaded to a rotatable nut 128 carried by the bar 116. A rough adjustment of the forward and back position of the doctor blade is effected by rotation of the nuts 128, which are connected to turn as a unit by means of pinions 130 secured thereto and a connecting chain 132. A fine adjustment of any one of said adjusting assemblies is effected by the rotation of a knob 134 secured

to the rear end of the sleeve 126. Inasmuch as this adjusting mechanism is in many respects similar to that shown in the prior art as exemplified by the patent to Munton et al. No. 3,078,827, issued February 26, 1963, and forms specifically no part of the present invention, further description thereof is believed unnecessary.

In order to provide an adequate seal which will prevent the leakage of liquid from the color pond between the dike 24 and auxiliary dike 25 a rubber strip 136 is preferably secured in a slot formed in the face of the dike 24 for engagement with the adjacent face of the cover 94 of air dike 25.

It will be noted that the auxiliary dike 25 mounted from one of the link elements 28 is supported in fixed angular relation to its associated link element which is in turn supported so that it is, when in operating position, always in the same angular relation to the circumference of the backing roll 10.

With the arrangement of the air dikes 25 shown an outward draft of air is provided which builds up sufficient pressure around the edges of the air dike body to prevent leakage of the liquid coating material past the dike.

An alternative construction and arrangement of the adjustable dike including an alternative device for supporting the dike in its operating position is shown in FIG. 7 of the drawings. In accordance with this modification the entire dike assembly is mounted on a bracket 140 which is supported for adjustment longitudinally of the backing roll 10 on a supporting guide bar 142 secured to the top surface of the bar 18. The bracket 140 is formed with a fixed clamping jaw 144, a cooperating clamping member 146 held by bolts 147, and with an upwardly extending tongue 148 which rides in a groove 150 formed in the under side of the bracket 140. In this form of the dike structure, the main dike member indicated generally at 152 fixedly mounted with relation to the surface 19 of the color pond 20 comprises two parallel plate members which are separated from one another by the spacer 154 and are rigidly secured as a unit to the bracket 140. The auxiliary dike member held in a relatively stationary position adjacent the backing roll and web is designated at 156 and is supported for relative sliding movement between the two parallel plate members forming the main dike member 152. At its forward edge the auxiliary dike member 156 is provided with a felt strip 158 adapted for a riding engagement against the web 16 passing around the coating roll 10. The adjustable dike 156 is supported for forward and back movement with relation to the main dike 152 along a predetermined path by means of pin and slot connections which include a curved slot 160 in the adjustable dike 156 and two cooperating bolts 162 which pass through the slot 60 and nuts 164. The arrangement is such that the adjustable dike moves forward and back around a pivot point at the bottom tip of the dike. The auxiliary dike may be held yieldably against the traveling web and coating roll by means which include a pneumatic cylinder 166 mounted on a platform provided by the bracket 140. A piston 167 in the cylinder 166 is provided with a downwardly extending piston rod 168 which is pivotally connected with one end of a rocker lever 170 mounted to turn about a pivot 172 on the stationary dike 152. At its other end the rocker lever 170 is provided with a slot 174 which receives a pin 176 mounted in one side face of the adjustable dike 156. Pneumatic pressure applied to the cylinder 166 through an inlet 178 acts against the piston 167, through the piston rod 168, rocker arm 170, and the pin and slot connection 174, 176 to move the yieldable dike member 156 against the surface of the traveling web 16. The movable dike can be readily secured in any desired position of adjustment in which the movable dike may, for example, be slightly separated from the traveling web by any suitable means as, for example, by tightening the nuts 164.

The invention having been described what is claimed is:

1. In a trailing blade type coater having a backing roll over which a traveling web to be coated is drawn in a downward direction, the combination of a color pond and doctor blade assembly including a color pond inclosure having an open face thereof positioned against and closed by said downwardly traveling backing roll and web, and a doctor blade having a web engaging edge secured to said color pond inclosure and providing a bottom closure for said open face against the web, and supporting means for said color pond and doctor blade assembly comprising members to which said color pond inclosure and doctor blade are secured having pivotal bearing receiving portions beyond each edge of the web in substantial alignment with the edge of the doctor blade, and relatively stationary supporting elements providing bearing supports on which said color pond and doctor blade assembly is rotatably adjustable about an axis coinciding approximately with the web engaging edge of the doctor blade across the width of said web closely adjacent thereto.

2. In a trailing blade type coater having a backing roll over which a traveling web to be coated is drawn in a downward direction, the combination of a color pond and doctor blade assembly including a color pond inclosure having an open face thereof positioned against and closed by said downwardly traveling backing roll and web, and a doctor blade having a web engaging edge, secured to said color pond inclosure and providing a bottom closure for said open face against the web, and supporting means for said color pond and doctor blade assembly comprising members to which said color pond inclosure and doctor blade are secured having pivotal bearing receiving portions in substantial alignment with the edge of the doctor blade, and supporting elements providing bearing supports on which said color pond and doctor blade assembly is rotatable about an axis coinciding approximately with the web engaging edge across the width of said web, brackets on which said elements are movably supported for adjustment toward and away from the web backing roll, and pivotal mountings coaxial with the backing roll on which the brackets are mounted for movement about said backing roll axis.

3. In a trailing blade type coater having a backing roll over which a traveling web to be coated is drawn in a downward direction, the combination of a color pond and doctor blade assembly including a color pond inclosure having a back face and an open face thereof positioned against and closed by said downwardly traveling backing roll and web, and a doctor blade having a web engaging edge secured to said color pond inclosure and providing a bottom closure for said open face against the web, and supporting means for said color pond and doctor blade assembly on which said assembly is adjustable toward and away from said traveling web, and a liquid tight expandable and collapsible closure between said back face of the color pond inclosure and said traveling web at each end of said color pond which comprises, at each end of said color pond and doctor blade assembly, a series of relatively movable overlapping dikes comprising a main dike having an edge thereof fitted to said enclosing back face of said color pond, means securing said main dike in fixed relation to said color pond, an auxiliary dike supported in closely adjacent parallel relation to said main dike having an edge contoured to meet the peripheral surface of said backing roll, and means securing said auxiliary dike in position with relation to said backing roll.

4. In a trailing blade type coater having a backing roll over which a traveling web to be coated is drawn in a downward direction, the combination of a color pond and doctor blade assembly including a color pond inclosure having an open face against said web and an enclosing rear face, and a doctor blade supported as a unit with said inclosure having a web engaging edge enclosing the bottom of said pond, members on which said color pond and doctor blade are fixedly mounted to turn about pivotal

bearing centers on said members in substantial alignment with the edge of the doctor blade, elements on said coater providing pivotal axis supports for said members, and at each end of said color pond and doctor blade assembly a main dike having an edge thereof fitted to said enclosing rear face of said color pond, means securing said main dike in fixed relation to said color pond, an auxiliary dike supported on each said element in closely adjacent parallel relation to said main dike having an edge contoured to meet the peripheral surface of said backing roll, so that each said element and auxiliary dike supported thereon is located with relation to said backing roll to maintain said contoured edge adjacent the backing roll supported web, means maintaining a liquid tight seal between said main and secondary dikes, and a control device acting when rendered operative to rock said members about said pivotal bearing centers and thereby to adjust the angular position of the color pond and doctor blade assembly including said main dikes relative to said backing roll and auxiliary dikes.

5. In a trailing blade type coater having a backing roll over which a traveling web to be coated is drawn in a downward direction, a color pond and doctor blade assembly including a color pond inclosure having an open face against said web and an enclosing rear face and a doctor blade supported as a unit with said inclosure having a web engaging edge enclosing the bottom of said pond, supporting means on which said color pond and doctor blade assembly is rotatably adjustable on an axis defined by said web engaging edge, the combination of, at each end of said color pond and doctor blade assembly, a main dike having an edge thereof fitted to said enclosing rear face of said color pond, means securing said main dike in fixed relation to said color pond, an auxiliary dike supported in closely adjacent parallel relation to said main dike having an edge contoured to meet the peripheral surface of said backing roll, means for securing said auxiliary dike in position with relation to said backing roll, and a seal between said main and secondary dikes.

6. In a trailing blade type coater having a backing roll over which a traveling web to be coated is drawn in a downward direction, a color pond and doctor blade assembly including a color pond inclosure for liquid coating material having an open face against said web and an enclosing rear face, and a doctor blade having a web engaging edge enclosing the bottom of said pond, and supporting means on which said color pond and doctor blade assembly is rotatably adjustable on an axis defined by said web engaging edge, the combination of, at each end of said color pond and doctor blade assembly, a main dike having an edge thereof fitted to said enclosing rear face of said color pond and a lower tip portion projecting between the doctor blade and traveling web, means securing said main dike in fixed relation to said color pond, and an auxiliary dike supported in closely adjacent parallel relation to said main dike having an edge contoured to said backing roll and traveling web engaged therewith, said main dike comprising a plate having a lower tip portion projecting between the doctor blade and traveling web and an air chamber formed in said tip portion, a cover plate for said chamber attached to said plate, said plate and cover plate having a thin aperture formed therebetween extending around said tip, and said auxiliary dike comprising a plate having an air chamber formed therein, and a cover for said latter air chamber, a thin aperture being formed between said plate and cover for directing an air jet outwardly to provide an air pressure seal between said dikes and said traveling web and doctor blade, and means for supplying air under pressure to said air chambers.

7. In a trailing blade type coater having a backing roll over which a web to be coated is drawn in a downward direction, a color pond and doctor blade assembly including a color pond inclosure for liquid coating material having an open face against said web and an enclosed rear face, and a doctor blade having a web engaging edge en-

closing the bottom of said pond and means for supporting said color pond and doctor blade assembly on which said assembly is adjustable toward and away from said traveling web, the combination of a dike assembly for closing an end of said color pond which comprises a main dike having an edge thereof fitted to said enclosing rear face of said color pond and having the lower end thereof extending into the apex formed between the doctor blade and traveling web, said main dike having in said lower end portion an air chamber with an air outlet directed against said doctor blade and traveling web adjacent said apex, and an auxiliary dike supported in closely adjacent parallel relation to said main dike, said auxiliary dike having an edge contoured to the peripheral surface of said backing roll, said auxiliary dike having an air chamber and passages arranged to direct an air jet outwardly against said traveling web.

8. In a trailing blade type coater having a backing roll around which a web travels downwardly to be coated, a color pond and doctor blade assembly which comprises a rigid tubular support extending transversely across the width of the web, said tubular support being of sufficient size and weight to substantially avoid sag, a color pond inclosure for liquid coating material comprising a bar having rear and bottom pond closing surfaces, means rigidly securing said bar to the tubular support along its length, members carried by said coater and on which said bar and tubular support are mounted at each end thereof, and a doctor blade assembly comprising an upper jaw integral with said bar, a pivotal support mounted on said bar directly beneath said tubular support, and a lower jaw supported to turn on said pivotal axis having a rearward extension from said pivot, and yieldable means acting against said rearward extension to close said jaws.

9. In a trailing blade type coater having a backing roll over which a web to be coated is drawn in a downward direction, a color pond and doctor blade assembly including a color pond inclosure for liquid material having an open face against said web and an enclosed rear face, and a doctor blade having a web engaging edge enclosing the bottom of said pond, forming an apex of said color pond inclosure between the blade and traveling web, and means for supporting said color pond and doctor blade assembly on which said assembly is adjustable toward and away from said traveling web, the combination of a dike assembly for closing an end of said color pond which comprises a dike support mounted on said color pond inclosure, a main dike secured to said dike support having an edge thereof fitted to said enclosing rear face of the color pond and doctor blade assembly, an auxiliary dike having an edge contoured to the peripheral surface of said backing roll including a lower tip portion entering the apex between the doctor blade and web, guide means for adjusting the position of said auxiliary dike relatively to said main dike about said apex toward and away from the traveling web, and means for supporting said auxiliary dike in an adjusted position.

10. A trailing blade type coater according to claim 9 in which said means for supporting said auxiliary dike in an adjusted position comprises a device biasing said auxiliary dike against the web.

11. In a trailing blade type coater having a backing roll over which a web to be coated is drawn in a downward direction, a color pond and doctor blade assembly including a color pond inclosure for liquid coating material having an open face against said web and an enclosed rear face, and a doctor blade having a web engaging edge enclosing the bottom of said pond forming an apex of said color pond inclosure between the blade and traveling web, and means for supporting said color pond and doctor blade assembly on which said assembly is adjustable toward and away from said traveling web, the combination of a dike assembly for closing an end of said color pond which comprises a support mounted on said color pond inclosure for adjustment longitudinally thereof, a main dike secured

to said support having an edge thereof fitted to said enclosing rear face of the color pond and doctor blade assembly, an auxiliary dike having an edge contoured to the peripheral surface of said backing roll including a lower tip portion entering the apex between the doctor blade and web, a bolt and slot connection between said dikes on which said auxiliary dike is movable about said apex toward and away from the web and backing roll, and means including a pneumatic cylinder connected with said auxiliary dike for biasing said auxiliary dike against the web and backing roll.

12. In a trailing blade type coater having a backing roll over which a traveling web to be coated is drawn in a downward direction, the combination of a color pond and doctor blade assembly including a color pond inclosure having an open face thereof positioned against and closed by said downwardly traveling backing roll and web, and a doctor blade having a web engaging edge secured to said color pond inclosure and providing a bottom closure for said open face against the web, and supporting means for said color pond and doctor blade assembly comprising members to which said color pond inclosure and doctor blade are secured having pivotal bearing receiving portions in substantial alignment with the edge of the doctor blade, a pair of brackets pivotally mounted on the coater coaxially with the backing roll adjacent the two ends thereof, and supporting elements pivotally mounted on said brackets providing bearing supports for said members on which said color pond and doctor blade assembly is rotatable about said axis, and a control means for effecting adjustments of said color pond and doctor blade assembly including operating cylinders connected with and determining the position of each of said brackets, said elements, and said color pond and doctor blade assembly about their respective pivots.

13. In a trailing blade type coater having a backing roll over which a traveling web to be coated is drawn in a downward direction, the combination of a color pond and doctor blade assembly including a color pond inclosure having an open face thereof positioned against and closed by said downwardly traveling backing roll and web, and a doctor blade having a web engaging edge secured to said color pond inclosure and providing a bottom closure for said open face against the web, and supporting means for said color pond and doctor blade assembly comprising ele-

ments adjacent each end of the backing roll providing bearings on which said color pond and doctor blade assembly is rotatable about an axis coinciding approximately with the web engaging edge across the width of said web, supporting means on which said elements are movable to adjust said bearings toward and away from the backing roll and web, and a closure at each end of said color pond and doctor blade comprising a main dike fixed to the rear face of said color pond, an auxiliary dike having an edge contoured to meet the peripheral surface of said backing roll, means securing each said auxiliary dike to an adjacent one of said elements so that said contoured edge is in closely adjacent parallel relation to the traveling web, and means maintaining a sliding contact between said main auxiliary dikes.

14. In a trailing blade type coater having a backing roll over which a traveling web to be coated is drawn in a downward direction, the combination of a color pond and doctor blade assembly including a color pond inclosure having an open face against said web and an enclosing rear face and a doctor blade supported as a unit with said inclosure having a web engaging edge enclosing the bottom of said pond, supporting elements on which said color pond and doctor blade assembly is rotatably adjustable on an axis defined by said web engaging edge, at each end of said color pond and doctor blade assembly, a main dike fitted and secured to the enclosing rear face of said color pond, an auxiliary dike having an edge contoured to said backing roll and traveling web engaging therewith, means attached to said supporting elements supporting the auxiliary dike in closely adjacent parallel relation to said main dike, said auxiliary dike having formed therein a compressed air receiving chamber and a narrow aperture extending along the length of said contoured edge adjacent the outside face of the auxiliary dike for supplying air under pressure to the outer side of said contoured edge against the traveling web, and a compressed air supply connection to said chamber.

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