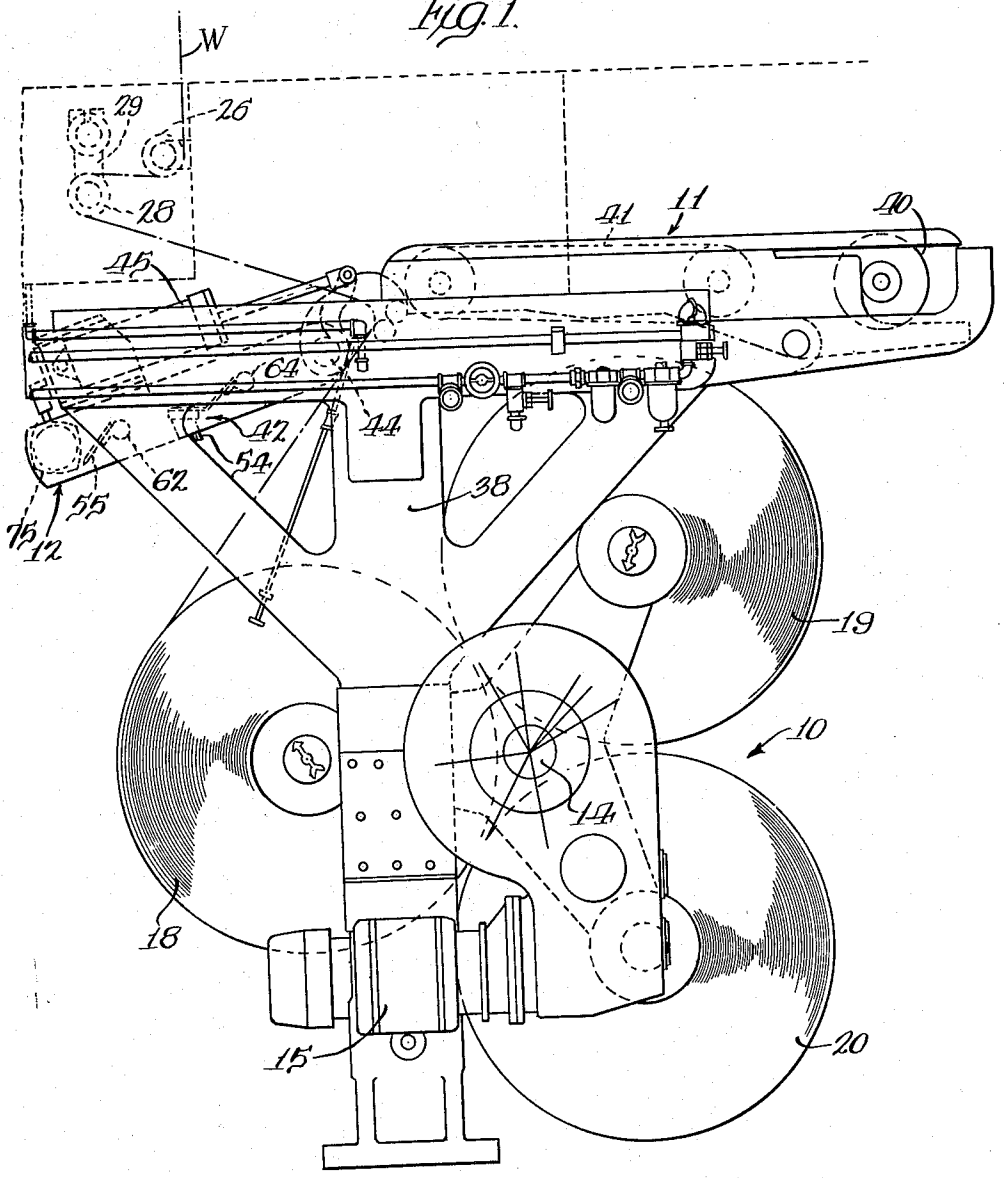
July 23, 1963 C. W. CHASE ETAL 3,098,618

WEB SPLICING APPARATUS

Original Filed April 21, 1955 5 Sheets-Sheet 1

Fig. 1.



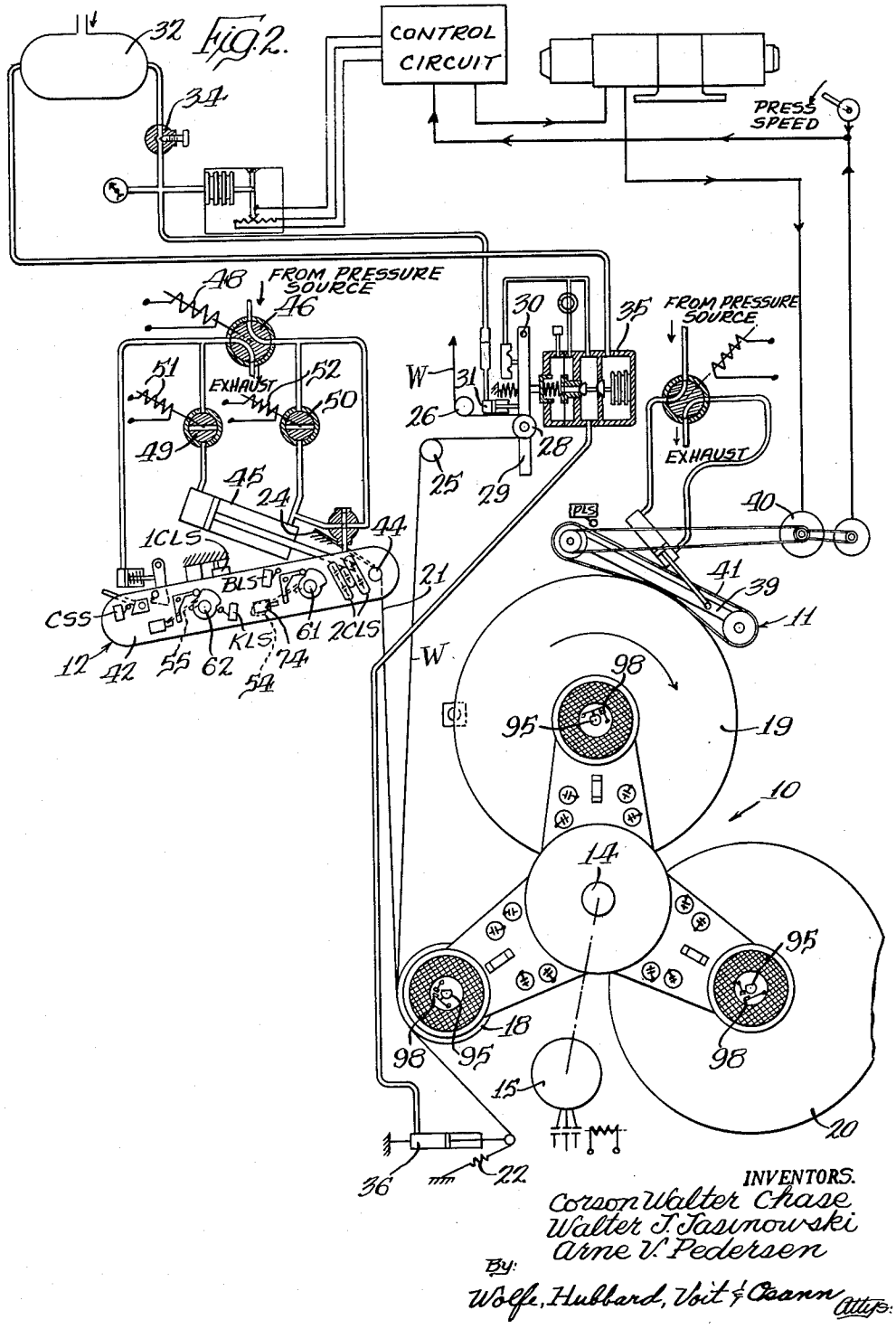
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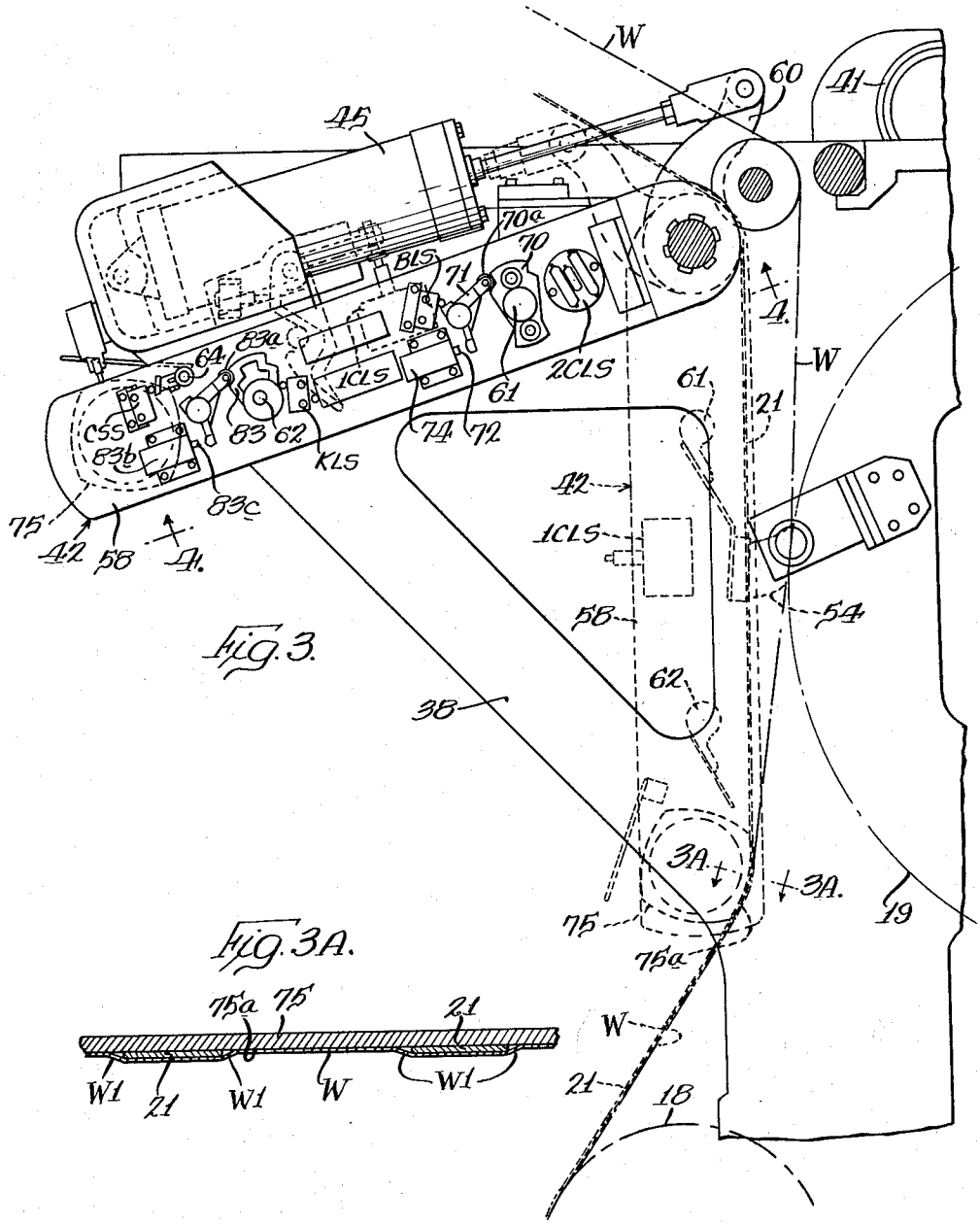


Fig. 3.

Fig. 3A.

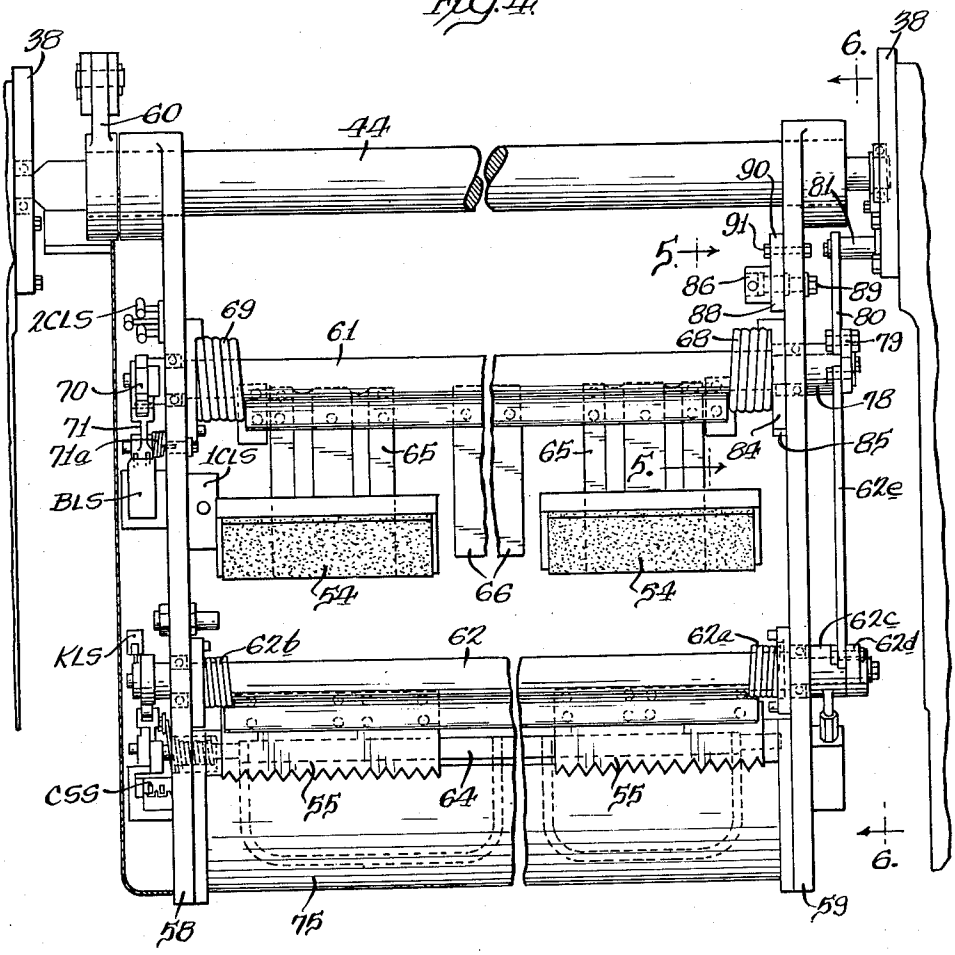
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Fig. 4.



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WEB SPLICING APPARATUS

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Fig. 6.

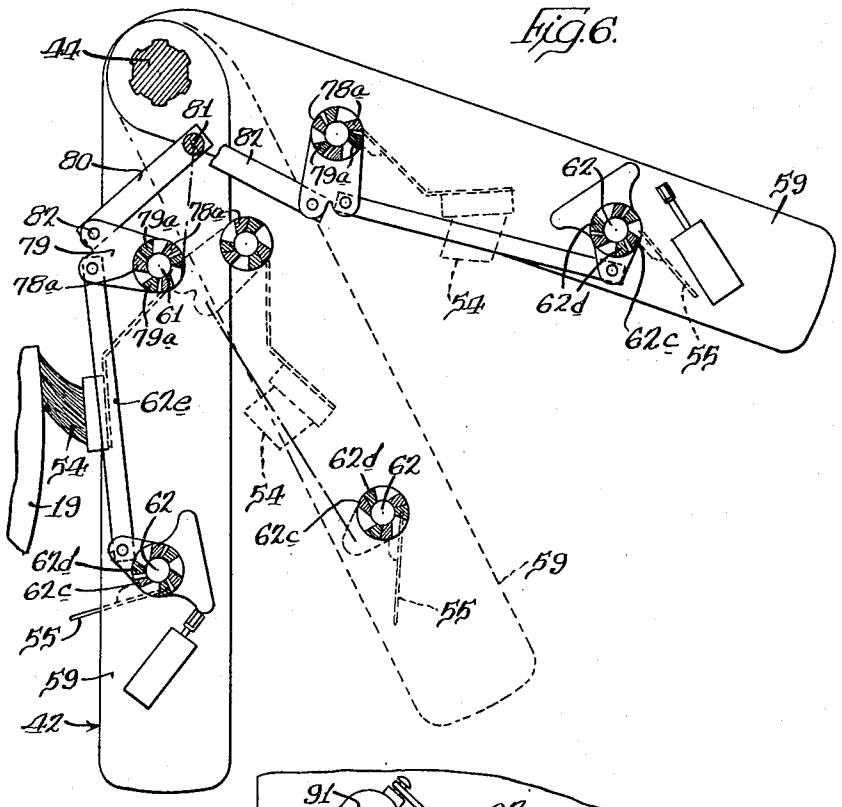
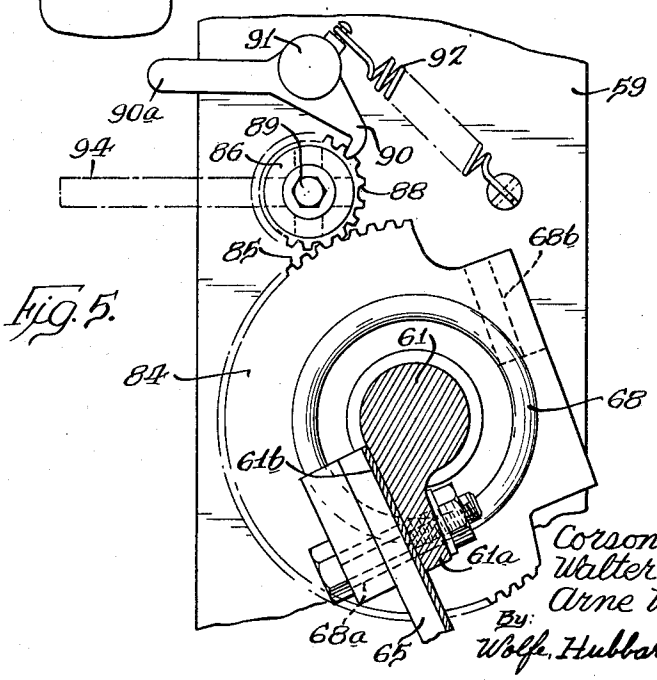


Fig. 5.



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3,098,618

WEB SPLICING APPARATUS

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Original application Apr. 21, 1955, Ser. No. 502,923, now Patent No. 2,963,234, dated Dec. 6, 1960. Divided and this application Sept. 26, 1960, Ser. No. 58,378

8 Claims. (Cl. 242—58.3)

The present invention relates in general to apparatus for splicing a new paper web roll to a web running into a newspaper press or the like without interrupting the operation of the latter, i.e., for making "flying pasters." More particularly, the invention has to do with apparatus for manipulating the running web during the splicing operation. This application is a division (filed under the provisions of 35 U.S.C. 120, 121) of applicants' copending application Serial No. 502,923, filed April 21, 1955, now Patent No. 2,963,234.

It is an object of the invention to enhance the ease with which the splicing apparatus may be employed for webs of different widths, and to make possible quick and convenient changes or adjustments in the force with which a running web is deflected against the surface of an adjacent new roll of paper to which a paste pattern has been applied.

It is further an object of the present invention to minimize wrinkling of the web when the brushes deflect it against the new roll by deflecting tension belts which the brushes straddle at the same time that the brushes contact the running web.

Other objects and advantages will become apparent as the following description proceeds, taken in conjunction with the accompanying drawings, in which:

FIGURE 1 is a side elevation of web splicing apparatus embodying the features of the invention;

FIG. 2 is a schematic diagram which is partially mechanical, electrical and pneumatic in form, illustrating the over-all organization of the apparatus;

FIG. 3 is a side elevation of the paster carriage assembly;

FIG. 3A is a detail sectional view taken substantially along the line 3*a*—3*a* in FIG. 3;

FIG. 4 is a bottom view of the paster carriage looking along the line 4—4 in FIG. 3;

FIG. 5 is a detail view, taken substantially along the line 5—5 in FIG. 4, of the brush pressure adjustment mechanism; and

FIG. 6 is a side elevation of the paster carriage, partially in section taken substantially along the line 6—6 in FIG. 4 and illustrating the brush and knife cocking mechanism.

General Organization

To make clear the environment of the invention here claimed, the general organization of the web splicing apparatus will first be described. As to those parts and operations of the apparatus which are not specifically treated in the present case, reference may be had to the above-identified copending parent application.

The exemplary embodiment of the apparatus shown in the drawings is intended to effect "flying pasters" in the paper web drawn into a high speed newspaper printing press. The web is, of course, drawn from a roll of paper. As one roll expires, the web drawn therefrom is spliced to a new roll and then severed from the old roll without stoppage of the press. In general, the apparatus includes a movable support for a plurality of paper rolls, here shown as a reel assembly **10** (FIG. 1) located beneath a predrive assembly **11** on one side and a paster carriage assembly **12** on the other side. Axially spaced on a reel shaft **14**, which may be turned by a suitable electric motor **15**, are spiders having radial arms which rotatably support three web rolls **18**, **19**, **20**. The running web W is drawn from the expiring roll **18** upwardly into the press (not shown) at a speed dependent upon the press speed. As shown in FIG. 2, the web W will be spliced to the roll **19** before the roll **18** completely expires. The reel shaft will then be rotated counterclockwise to bring the roll to an upper position where it can be spliced to the web when the roll **19** is about to expire, after which the roll **18** can be replaced with a fresh roll of paper. In the positions shown, the rolls **18**, **19**, **20** are respectively designated the "expiring roll," the "new roll," and the "newly loaded roll."

An adjustable automatic system tensions the web W. This is preferably of the pneumatic type disclosed and claimed in the McWhorter Patent No. 2,743,881 issued May 1, 1956, to which reference may be made for a more detailed description.

Briefly, the automatic tensioning system includes stationary tension straps **21** fixed to springs **22** at their lower ends and extending upwardly to anchor points **24** so that they partially wrap and frictionally engage the periphery of the expiring roll **18**. The web W passes between spaced rollers **25**, **26** and over a floating roller **28** carried by a depending arm **29** pivoted at **30**. The arm **29** is balanced between a loading cylinder **31** supplied with air pressure from a reservoir **32** through a pressure regulating valve **34**. On the opposite side of the arm **29** is a pressure-loaded valve **35** supplied with air pressure from the reservoir and connected upon movement of the plunger to control the pressure supplied through pneumatic actuators or rams **36** engaged with the lower end of the tension belts **21**.

As tension in the web W increases or decreases, the arm **29** is rocked about its pivot **30**, thereby shifting the plunger of the valve **35** so that the ram **36** decreases or increases the pressure of the belts. The frictional drag of the belts **21** on the roll **18** is thus automatically decreased or increased to restore the tension in the web W to its original value. That value may be adjusted manually by setting the pressure regulator **34**.

The predrive assembly **11** is mounted on the upper portions of Y-shaped supports **38** (FIG. 1) which also journal the reel shaft **14**. The assembly includes a carriage **39** (FIG. 2) movable or pivotable between a retracted position (permitting clearance for a roll as the reel rotates) and in operative position (permitting the new roll to be either driven or braked). There are control means, on the one hand, to cause a motor **40** and a predrive belt **41** to drive the new roll **19** up to a peripheral speed which substantially matches the web speed by comparing two speed signals prior to a splice; and, on the other hand, to retard the new roll **19** by regenerative braking after the splice is made in order to maintain web tension before the new roll is brought into operative engagement with the tension straps **21**. The carriage **39** is raised and lowered to and from its retracted and operative positions automatically to permit the newly loaded roll **20** to clear it as the reel rotates. Further details of the predrive carriage and its controls need not be given here, but may be gained by reference to the copending parent application identified above.

It will be understood that prior to a splice, the leading edge of a new roll **19** is coated with a suitable adhesive paste or glue which remains tacky. A discontinuity is left in the adhesive where the predrive belt **41** engages the roll. The paster carriage assembly **12** performs two major functions. First it deflects the running web W against the properly positioned new roll **19** in order to bond the

web to the leading edge of the new roll. Secondly it severs the old web from the expiring roll **18** so that the web drawn into the press thereafter comes from the roll **19**. This paster carriage assembly includes a carriage **42** pivoted to rock between a retracted or stored position and a lowered or operative position about a support shaft **44** under the influence of a double acting pressure fluid (pneumatic) actuator or ram **45** controlled by a four-way solenoid valve **46** moved between its two positions in response to energization of a solenoid **48**. Also connected in the pneumatic circuit are two normally closed safety valves **49**, **50** movable to open positions in response to energization of solenoids **51** and **52**.

Supported on the paster carriage **42** are a plurality of brushes **54** cocked against spring biasing means and retained by a latch. With the carriage lowered, release of the latch permits the brushes **54** to swing outwardly and deflect the web W against the predriven, rotating new roll **19**. This in turn, causes the web W to adhere to the paste on the new roll. Also supported on the paster carriage and actuated shortly after the brushes, are a plurality of knives **55** cocked against spring means and retained by a latch. When the latch is released, the knives swing to sever the web W at a point beneath the brushes so that the expiring roll web is broken. This completes the splicing operation, so the paster carriage **42** may be raised, the reel rotated to bring the roll into engagement with the tensioning straps **21**, and the predrive carriage **39** raised to its stored position.

The Paster Carriage

In physical structure, the paster carriage **42** has two side frames **58**, **59** (FIGS. 3 and 4) held fast at their one end on the support shaft **44** journaled between the supports **38**. The shaft is rocked to raise or lower the frames **58**, **59** by the double-acting air ram **45** which has its cylinder connected to one support **38** and its piston rod connected to a radius arm **60** fixed at one end of the shaft. Rotatably extending between the side frames are a brush shaft **61**, a knife shaft **62** and a safety shaft **64**.

Attached to the knife shaft **62** are a series of serrated knives **55**. When the carriage **42** is lowered (dotted line position, FIG. 3) rocking of the knife shaft and knives **55** advances the latter into engagement with the web W, thus severing that web. The severing or cutting action occurs after the web has first been deflected against the new roll **19**, as will be explained below.

As shown in FIG. 5, the brush shaft **61** is non-circular in cross section having an integral lip **61***a* which presents a flat, tangential surface **61***b*. The brushes **54** are held axially spaced on the shaft **61** by brackets **65** which are bolted directly to the flat surface **61***b*. In this manner, clamping of the brackets to the shaft, with the attendant possibility of slipping and the necessity of accurately phasing the brushes on a circular shaft, is eliminated.

It will be understood that the several brushes **54** are spaced axially along the shaft **61** to clear the tension straps **21** when deflected outwardly against the web B as shown by dashed lines in FIG. 3. Moreover, in order to deflect the tension belts **21** at the same time the brushes engage the running web W, a plurality of belt deflectors **66** (FIG. 4) are bolted fast to the shaft **61** in-between the brushes. These shift the straps **21** at the same time that the web is deflected, and eliminate wrinkling of the web by providing contact with either the brushes or the straps along its full width. If the spaced brushes alone were pressed against the web W, longitudinal wrinkles in the latter are likely to occur. And as the wrinkled portion of the web runs through the press, particularly around rollers, there is likelihood that they may crack or tear transversely, thus rupturing the entire web and necessitating press stoppage and rethreading.

For biasing the brush shaft **61** in a counterclockwise direction (as viewed in FIG. 3), it is equipped with torsion springs **68** and **69**. These springs are stressed or cocked by clockwise rotation of the shaft **61** as an incident to retraction of the carriage to its upper position, as explained more fully below.

On the outer side of the frame **58**, a latch cam **70** (FIG. 3) fast on the brush shaft **61** is engaged by latched member **70***a* on a bell crank **71** which is biased in a clockwise direction (FIG. 3) by a torsion spring **71***a* shown in FIG. 4. As the shaft **61** is cocked clockwise, the latch member **70***a* snaps into the cam **70** to hold the shaft **61** against the torsional loading of the springs **68**, **69**. The member **70***a* is tripped when the bell crank **71** is struck and rocked counterclockwise by the plunger **72** of a solenoid **74** when the latter is energized. Concurrent with energization of the solenoid **74**, the rocking of the bell crank **71** counterclockwise (FIG. 3) actuates a limit switch BLS having its follower riding on a control surface of the bell crank. This switch has a plurality of contacts used for control purposes as explained below.

Also mounted on the outer surface of the frame member **58** are two carriage limit switches **1**CLS and **2**CLS which are used for controlling the downward and upward movement of the paster carriage. The functions and operations of these switches are detailed in the aforementioned copending application.

Between the free ends of the frames **58**, **59** there extends a large hollow web deflector tube **75**. As the carriage swings downwardly to its operative position shown by dashed lines in FIG. 3, a smoothly rounded surface **75***a* on this tube engages both the running web W and the tension straps **21** to shift them inwardly. The web thus runs substantially vertically past the brushes **54** and the knives **55** before the latter are released. The deflector tube **75** assures that the running web W and the brushes and knives have the same relative positions prior to actuation of the latter so that the same deflecting and severing action always takes place.

It will be seen in FIGS. 3 and 3*a* that the tension straps **21** bear in axially spaced locations against the surface **75***a* of the deflector tube **75**, and the running web W bears against the straps and also against the surface **75***a* intermediate the straps. Those portions of the web W running over the straps **21** have to travel farther, therefore, particularly if the straps are relatively thick. As a result, longitudinal wrinkles may be formed in the web at the edges of the straps. Such wrinkles, as explained before, may often crack transversely as the web runs over the rollers in the press, resulting in rupture of the entire web.

To obviate this difficulty, the radius of curvature of the deflector tube **75** is made very large as compared to the thickness of the tension straps **21**. Preferably, the radius of curvature of the tube surface is at least 200 times the thickness of the belts so that a sharp bend or wrinkle in the web is eliminated. As shown in FIG. 4*a*, only a slight, smooth curve is created in the web portions W1 at the edges of the belts **21**. This web flexure is not sufficient to cause appreciable wrinkling. In order to achieve the above-stated relationship of the curvature of the deflector tube surface and the tension belt thickness, the latter is not made cylindrical. Rather, it is four-sided, with each surface having its center of curvature displaced from the geometrical center of the tube. Considerable space is saved as compared to using a large diameter cylindrical tube.

The mechanism for cocking the brush shaft **61** against its torsion springs **68**, **69** as the carriage is retracted is illustrated in FIGS. 5 and 6. Fixed on the end of the brush shaft **61**, adjacent the frame **59**, is a hub **78** (FIG. 4) which has a plurality of circularly spaced jaws **78***a* (FIG. 6). Rotatable on the shaft **61** is a cocking lever **79** which has circularly spaced jaws **79***a*. These latter jaws interfit axially between the hub jaws **78***a* but with limited freedom for relative circular movement. A first link **80** is pivotally connected between a pin **81** fast on the stationary support **38** and a pivot pin **82** on the lever

79. It will be observed that the anchor pin 81 is located somewhat beneath the support shaft 44.

Assume that the paster carriage 42 is in its lowered position, and that the brush shaft 61 has been released, so that the brushes 54 extend outwardly (FIG. 6). As the frame 59 swings upwardly towards its retracted position, the brush shaft 61 swings about the shaft 44 while the first link 80 pivots about the stationary pin 81. Due to the difference in centers, therefore, the link 80 rocks the cocking lever 79 about the shaft 61, bringing the jaws 79*a* into abutment with the jaws 78*a*. As a result, when the carriage is retracted, the shaft 61 is rocked counterclockwise (clockwise as viewed in FIG. 3) until the latch member 70*a* snaps into latching engagement with the cam 70. In this manner, the torsion springs for the brush shaft are automatically stressed and the latch means for this shaft engaged as an incident to retraction of the carriage.

As the carriage descends from its operative position, however, the link 80 causes the cocking lever 79 and its jaws to rotate clockwise relative to the shaft 61 and the hub jaws 78*a* fixed thereon. The cocking lever jaws 79*a* retreat from the hub jaws 78*a* because the shaft 61 is latched, leaving a clearance space between the jaws which permits the shaft to be rotated and the brushes 54 to be deflected outwardly whenever the brush release solenoid 74 is energized.

When the brush shaft is released, the force of the torsion spring is cushioned by flexure of the brush bristles in pressing the running web W against the new roll 19. This cushion softens the impact between the jaws 79*a* and 78*a*.

The knife shaft 62 is actuated by torsion springs 62*a*, 62*b* which are cocked automatically upon retraction of the paster carriage. As shown in FIG. 6, the knife shaft 62 is fitted with a jaw-tooth hub 62*c* which cooperates with a jaw-cocking lever 62*d*, the latter two parts being identical to the hub 78 and cocking lever 79 previously described. The two cocking levers 79 and 62*d* are connected by a link 62*e*, so that they act in unison. Whenever the brush shaft 61 is cocked, the knife shaft 62 is also cocked. The knife shaft 62 is held in a cocked position by a cam 83 and latch member 83*a* (FIG. 3). It is released at the desired instant by energization of a solenoid 83*b* having a plunger 83*c* which trips or releases the latch member.

The width of the paper web and the rolls is often varied for different types of printing operations. For example, the width of the paper rolls may be ¼, ½, ¾ or the full width of the roll for which the press is designed. When fractional widths are used, it is desirable that the pressure with which the brushes urge the running web against the new roll be reduced to prevent excessive pressure of the brushes from rupturing the running web.

For the purpose of adjusting the force with which the brushes deflect the web W, and thus accommodating the apparatus for use with supply rolls of different widths, a simple yet conveniently operated bias adjusting mechanism is associated with torsion springs 68 and 69. As shown in FIGS. 4 and 5, one end 68*a* of the torsion spring 68 is anchored in the lip 61*a* of the shaft 61 and its other end 68*b* anchored in a collar 84 formed with gear teeth 85 on its cylindrical surface. The collar is rotatable on a cylindrical portion of the shaft 61 adjacent the inner side of the frame 59. For holding the collar stationary with respect to the frame and for adjusting its angular position to change the bias in the spring 68, a capstan 86 integral with a pinion 88 is journaled on a pin 89. The pinion 88 is, in turn, releasably locked against rotation by a pawl 90 pivoted on a pin 91 and urged into engagement with the gear teeth of the pinion by a tension spring 92.

To adjust the cocked torsion of the spring 68, an operator need only insert a capstan bar 94 through alined holes in the capstan, rock it to take pressure off the pawl, depress an handle 90*a* to rock the pawl 90 about its pivot 91 against the bias of the spring 92, and then turn the capstan bar 94. Rotation of the capstan and the integral pinion 88 causes the collar 84 to be rocked clockwise or counterclockwise (FIG. 5) to increase or decrease the bias in the spring 68. The pawl handle 90*a* is then released so that the gear 88 and the collar 84 are locked in a selected position.

A force or bias adjusting mechanism similar to that described in connection with the spring 68 may also be associated with the spring 69.

The automatic sequencing controls and the safety devices of the present apparatus need not be treated in detail in the present case, inasmuch as the appended claims do not pertain thereto and a full understanding thereof may be gained from reference to the copending parent application identified above. It will suffice in the present application to note the general operational steps which are carried out during one web splicing cycle.

When the expiring roll 18 is almost consumed, the reel 10 is rotated counterclockwise (FIG. 2) to bring the new roll 19 closely adjacent to the running web W. The predrive carriage 39 is then lowered until the endless belt 41 rests on the surface of the new roll; and the paster carriage 42 is lowered to its operative position (dashed lines, FIG. 3) closely adjacent to the web W, but on the opposite side thereof from the new roll 19. As the paster carriage 42 is lowered, the deflector member 75 engages and shifts both the tensioning straps 21 and the web W (compare FIGS. 2 and 3). Wrinkling and rupture of the web running over the surface 75*a* and the straps 21 (FIG. 3A) is avoided due to the fact that the radius of curvature of the surface is made greatly in excess of the thickness of the straps 21.

After both carriages 39 and 42 have been lowered, the predrive motor 40 is started and controlled so that the new roll 19 is driven from the belt at a peripheral speed which substantially matches the linear velocity of the web W. This assures that when the web W is deflected against the paste or glue on the leading edge of the new roll web, the two will be traveling at approximately the same speed and will not tend to tear apart.

When the new roll 19 has been predriven to match the speed of the web W, the brush shaft 61, previously cocked and latched against the bias of torsion springs 68 and 69, is released by energizing the solenoid 74. Accordingly, the springs rock the shaft 61 counterclockwise (FIG. 3) so that the brushes 54 engage and deflect the web W against the surface of the new roll 19. When the brushes are thus actuated, the strap deflectors 66 on the shaft 61 also swing outwardly to deflect the tensioning straps 21, so that the latter remain in engagement with and lend support to the running web. This reduces the possibility of web wrinkling and rupture.

When the paste pattern on the new roll 19 comes under the deflected running web, the leading end of the new web roll is bonded to the running web and thus is pulled with the latter into the printing press. Shortly thereafter, the solenoid 83*b* (FIG. 3) is energized to trip the latch member 83*a*, so that the knife shaft 62 is rocked counterclockwise by its previously cocked torsion springs 62*a*, 62*b*. The knives 55 are thus swung into and sever the web being drawn from the expiring roll 18. The press now receives the web drawn from the new roll instead of the expiring roll.

Immediately after such web severing, the predrive motor 40 is made to act as a regenerative brake, so that the belt 41 retards rotation of the new roll 19 and creates the necessary tension in the new web during the transition period required to move the new roll into operative engagement with the tension straps 21. Also, immediately after the web severing occurs, the paster carriage is raised or retracted by the fluid actuator 45. Then the reel motor 15 is energized to turn the reel 10 counterclockwise (FIG. 2) until the new roll is engaged with the tensioning straps 21. As such engagement occurs,

the retarding effect of the belt 41 and motor 40 is reduced, and the predrive carriage then raised to its stowed position. The apparatus is now in its original condition, and ready to repeat another cycle of operation to substitute the roll 20 for the roll 19 when the latter is about to expire.

As the paster carriage 42 is returned to its upper or stowed position, the cooperating jaw members 78, 79 and 62c, 62d are rocked by the links 80 and 62c so that both the brush and knife shafts 61 and 62 are rocked clockwise (FIG. 3) to stress their associated torsion springs and their latches re-engage. Of particular importance is the mechanism for adjusting the degree to which the spring 68 is stressed upon cocking. This includes the anchor member 84, the capstan 86 and pinion 88, together with the retaining pawl 90, previously described in connection with FIG. 5. By a relatively quick and convenient operation, an operator can reset the angular position of the anchor member 84, and thus adjust the cocked bias of the spring 68 and the force with which it urges the brushes 54 against the running web W when the latter are released during a splicing operation.

We claim as our invention:

1. In a paster carriage for web splicing apparatus, the combination of a rotatable shaft, a plurality of brushes fixed on brackets along said shaft, a torsion spring for urging said shaft in one direction, means for cocking said shaft against the force of said spring, releasable latch means for holding the shaft cocked, an anchor collar connected to said spring and rotatable about said shaft to increase or decrease the torsional bias in that spring, gear teeth on said anchor collar, a rotatable capstan having gear teeth thereon meshed with the collar teeth, and a spring biased, releasable pawl engaged with said capstan teeth to lock the capstan and the collar in adjusted angular positions which determine the cocked bias of said spring.

2. In a paster carriage for web splicing apparatus, the combination of a rotatable shaft, a plurality of brushes fixed along said shaft, a torsion spring for urging said shaft in one direction, means for cocking said shaft against the force of said spring, releasable latch means for holding the shaft cocked, a rotatable anchor collar connected to said spring, gear teeth on said collar, movable means engaged with said gear teeth for rotationally setting said anchor and thereby adjusting the cocked bias of said spring, and manually releasable means for holding said setting means stationary in a selected position of adjustment.

3. In a paster carriage for web splicing apparatus, the combination of a rotatable shaft, a plurality of brushes fixed along said shaft, a torsion spring for urging said shaft in one direction, means for cocking said shaft against the force of said spring, releasable latch means for holding the shaft cocked, a rotatable anchor connected to said spring, means for rotationally setting said anchor to adjust the cocked bias of said one spring, and manually releasable means for holding said setting means stationary in a selected position of adjustment.

4. In apparatus for splicing a running web drawn from an expiring roll to an adjacent rotating new web roll having adhesive on its leading edge, the combination of a plurality of stationary tension straps frictionally engaged with the expiring roll and extending along the side of the running web opposite the new roll, a paster carriage positionable adjacent the tension belts and the running web, a shaft rotatable in said carriage, a plurality of brushes spaced axially along and supported by said shaft to clear said belts, spring means to rotate said shaft and move said brushes to deflect the web against the adhesive on the new roll, and deflectors mounted on said shaft in between and adjacent said brushes to deflect said straps against the web and thereby prevent wrinkling of the latter due to the spacing of said brushes.

5. In apparatus for splicing a running web drawn from an expiring roll to an adjacent rotating new web roll having adhesive on its leading edge, the combination of a plurality of stationary tension straps frictionally engaged with the expiring roll and extending along the side of the running web opposite the new roll, a paster carriage positionable adjacent the tension belts and the running web, a plurality of brushes longitudinally spaced in said carriage to clear said straps and movable to deflect the web against the surface of the new roll, and a deflector movable with and adjacent to said brushes to deflect said straps against the web and thereby prevent wrinkling of the latter due to the spacing of said brushes.

6. In apparatus for splicing a running web drawn from an expiring roll to an adjacent rotating new web roll having adhesive on its leading edge, the combination of a stationary tension strap frictionally engaged with the expiring roll and extending along the side of the running web opposite the new roll, at least two brushes longitudinally spaced to clear said strap and movable to deflect the web against the adhesive on the new roll, and a deflector disposed between, adjacent to and movable with said brushes to deflect said strap against the web and thereby prevent wrinkling of the latter due to the spacing of said brushes.

7. In apparatus for splicing a running web drawn from an expiring roll to a new web roll, the combination comprising a plurality of spaced tension straps frictionally engaged with the surface of the expiring roll and disposed generally along the path of the running web, a paster carriage movable between a stored position and a lowered position adjacent the running web, a deflector tube on said carriage which engages and deflects both said straps and the web to deflect the latter when the carriage is in its lowered position, said tube having a curved surface which bears against said straps and over which the web runs, said surface having a radius of curvature at least 200 times greater than the thickness of said straps to minimize wrinkling of the web.

8. In apparatus for splicing a running web drawn from an expiring roll to the web of a new roll, the combination comprising a plurality of tensioning straps of a given thickness spaced axially along and engaged with the surface of the expiring roll and disposed generally along the path of the running web, a paster carriage movable between stowed and operative positions and when in the operative position being adjacent the running web on the side thereof opposite the new roll, means on said paster carriage for sequentially deflecting the running web against the surface of the new roll and severing the web drawn from the expiring roll, a deflector member mounted on said carriage and disposed to engage and shift both said straps and the running web when the carriage is moved to its operative position, said deflector member having a curved surface which engages said straps and the running web, said surface having a radius of curvature which is greatly in excess of the said thickness of said straps, thereby to minimize wrinkling of the running web and possibility of rupture thereof.

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