June 1, 1943. O. C. ROESEN 2,320,656

WEB ROLL CHANGING

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Fig. 1.

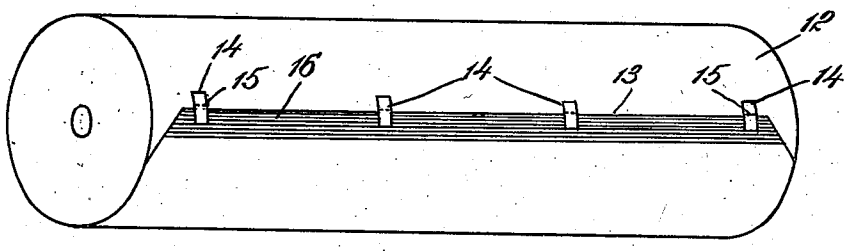


Fig. 2.

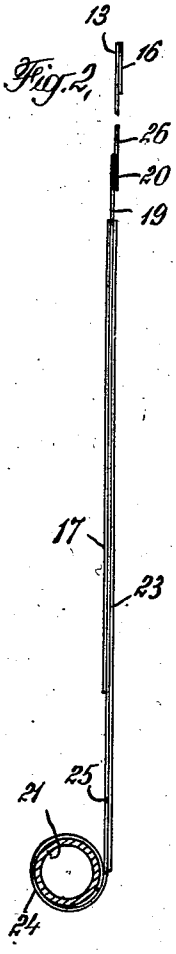


Fig. 3

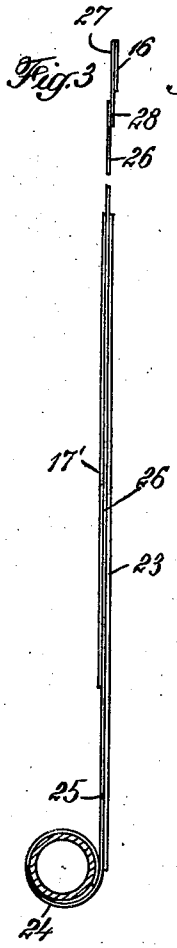


Fig. 4

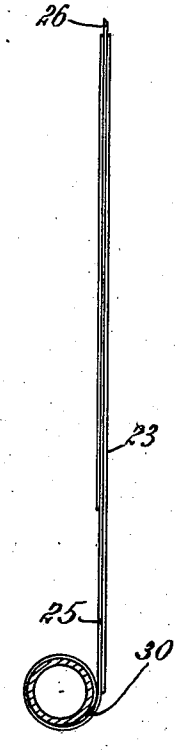
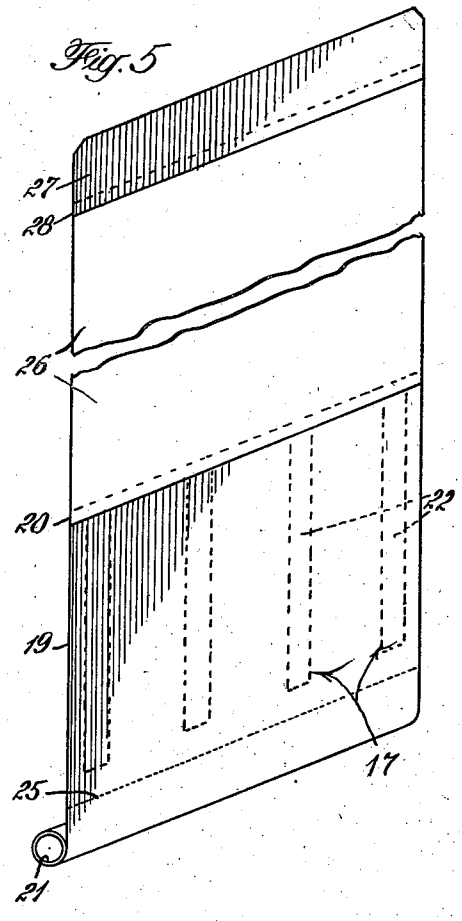


Fig. 5



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Fig. 6,

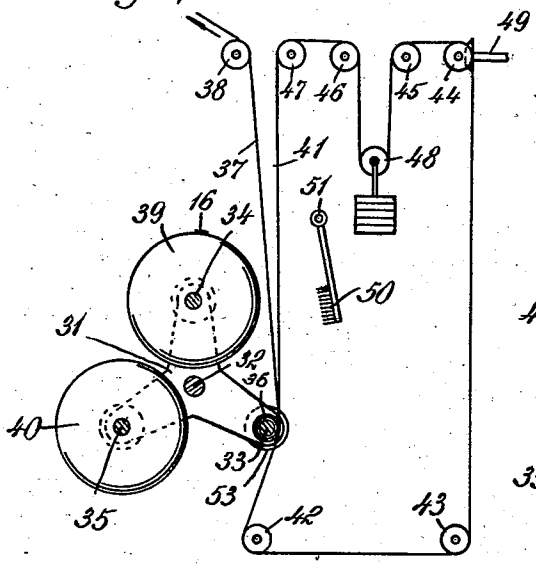


Fig. 7,

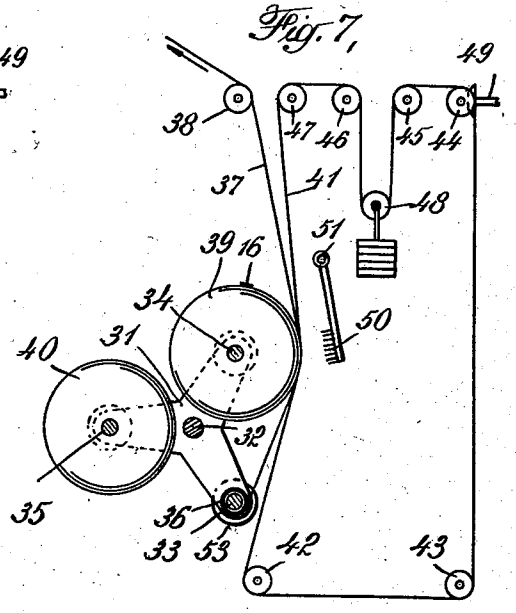


Fig. 8,

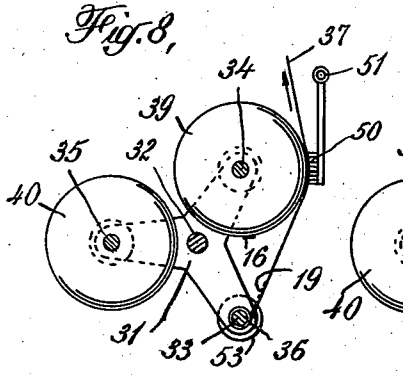


Fig. 9,

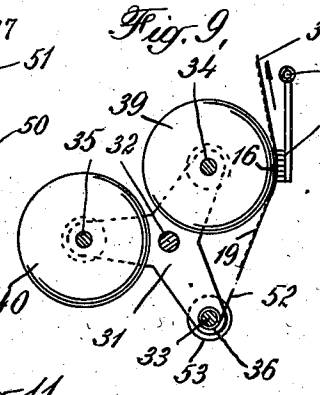


Fig. 10

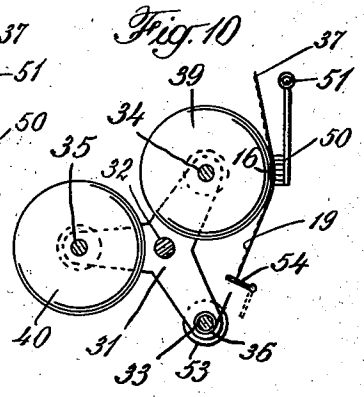
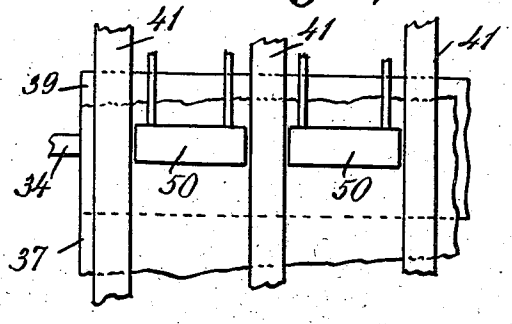


Fig. 11,



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UNITED STATES PATENT OFFICE

2,320,656

WEB ROLL CHANGING

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Application July 22, 1941, Serial No. 403,515

27 Claims. (Cl. 242—58)

This invention relates to the splicing of webs and more particularly concerns the splicing of the leading or outer end of the web on a new web roll such as that used to supply a paper web to a printing press or the like, to the core or inner end of a similar web from another roll while the latter is running into the press or other web-consuming devices.

The paper web fed to a printing press is supplied to the press room in large rolls from which it runs to the press mechanism. These webs must be replaced periodically during the printing of each edition of the newspaper or other printed matter, and it is, of course, essential in modern high speed printing practice that the web roll replacement be made without interruption of the press operation. Accordingly, the new or replacement web roll must be accelerated to a speed at which its surface velocity is the same as or very closely approaches the speed of the web running to the press from the expiring roll. The leading edge of the new web roll must be removably fastened to the roll surface and must carry a strong and tacky adhesive, and the two webs must be pressed together after the proper new roll speed is attained and only at such point in the rotation of the new roll that the adhesive-carrying leading end of the new roll is approaching the surface of the running web. The last mentioned condition is essential to prevent the partial sticking of the adhesive-bearing leading end of the new roll to the running web, whereby a loose adhesive-bearing flap would be carried into the press.

In the past, the above described web splicing operation has been successfully performed either by slowing down the running web, with consequent decrease in output, or by the use of complicated and expensive apparatus. Thus it has been necessary to provide high speed splicing or "paster" equipment such as roll spindle driving mechanism or surface driving belts capable of being operatively connected with each new roll in turn to accelerate the same to the required speed, and further to provide mechanism timed in accordance with the angular position of the leading edge of the web on the new roll for properly governing the critical operation of pressing the running web against the new roll surface, and thereafter severing the web from the expiring roll.

With the above and other considerations in mind, it is proposed in accordance with the present invention to provide an improved and highly simplified method of splicing the web from a new roll to the web running at high speed from an expiring roll without the use of any auxiliary apparatus such as new roll speed-up means of the belt or spindle drive type or timed web pressing or severing means. The invention also embraces an improved roll of web arranged for making a splice according to my improved method, and certain novel elements whereby a conventional roll of paper web may be readily converted into a roll prepared and arranged for use in accordance with my method.

The invention will be described in connection with a typical application thereof, namely, in the splicing or replacement of a paper web running into a printing press. It should be understood that the method and apparatus described is also applicable to the replacement of webs of fabric and other material and paper webs fed to mechanism other than printing presses.

In describing the invention in detail, reference will be made to the accompanying drawings in which certain typical embodiments thereof are illustrated. In the drawings:

Fig. 1 is a perspective view of a paper web roll prepared for use in accordance with the invention;

Fig. 2 is a sectional view on a larger scale of the inner or core end and outer or leading end of the web for a similar roll;

Fig. 3 is a sectional view similar to Fig. 2 of a web with the leading end formed as a separate section attached to the main body portion of the web;

Fig. 4 is a sectional view similar to Fig. 2 showing the inner core end or tail of the web fixed to the roll core;

Fig. 5 is a perspective view of the web illustrating the use of distinctively colored end portions;

Fig. 6 is a diagrammatic side elevation of a web roll reel and tension belts for use in practicing the invention in the position in which the web is running from one roll prior to the time when replacement thereof by a new roll is required;

Fig. 7 is an elevation similar to Fig. 6 showing the reel in the position it occupies while the new roll is being accelerated to web speed;

Figs. 8 and 9 are respectively similar views showing the positions of the parts just before and at the time that the splice is made;

Fig. 10 is a view similar to Fig. 9 showing a modified splicing procedure in which the web from the expiring roll is severed by a knife or like part;

Fig. 11 is a fragmentary front elevation of a

web roll showing the arrangement of the tension belts.

Referring to the drawings, and particularly to Figs. 1 through 5, a new paper web roll 12 of the type used to supply high speed printing presses and incorporating certain features of my invention is illustrated. The leading or outer end 13 of the web on this roll is preferably removably secured to the roll surface by any suitable known means. In the disclosed embodiment, frangible gummed tabs 14 are used for this purpose, but a weak adhesive, sticking the leading end 13 to the surface of the next course of the web on the roll, may be substituted in accordance with known practice. The opposite ends of the tabs 14 illustrated are respectively stuck to the outer surface of the leading end 13 of the web and to the surface of the next course of the web on the roll, and a weakened portion such as a line of perforations 15 separates the tab ends so that the tabs tear along this line and release the leading end of the web when it is spliced to a running web and pulled away from the roll. Frangible tabs of this type are described in detail in Wood Patent No. 1,996,497.

In accordance with my invention, the opposite surfaces of the web on each new roll are provided with layers of an adhesive at points adjacent opposite ends of the web. The adhesive used, which will be hereinafter referred to as a self-sticking adhesive, is applied to the web in fluid form and tenaciously adheres thereto, and thereafter the exposed surface of the applied layer can be rapidly dried to a point where such surface will not adhere to an uncoated web surface pressed against it, but will adhere tenaciously to a similar dried exposed adhesive surface. Thus the self-sticking adhesive is one which adheres to the web when applied, and when dried its surface coheres to a like or similar adhesive surface but does not adhere to an uncoated web surface.

An adhesive suitable for the purpose described may comprise any one of a number of known non-vulcanizing rubber cements. In general, these cements comprise raw unvulcanized rubber, usually subjected to a small amount of hot milling, dissolved in a suitable solvent. Solvents employed in such cements include gasoline, benzene, ethylene dichloride, carbon tetrachloride, varnish maker's and painter's naphtha, and a special rubber solvent comprising a petroleum distillate having an initial boiling point of from about 120° to 180° F. and an end point of from about 250° to 288° F. The amount of rubber in such cements runs up to 8% or 10%, and known solvent diluents such as isopropanol, ethanol, butanol, amyl acetate, butyl acetate, acetone, or methyl ethyl ketone are sometimes added. A commercial rubber cement suitable for the described purpose is available on the market under the trade name "Best-Test white rubber paper cement" and is made by the Union Rubber and Asbestos Company of Trenton, New Jersey. Although the above described rubber cements are suitable self-sticking adhesives, it should be understood that the use of similar adhesives having this self-sticking property is not precluded.

As shown in Fig. 1, a layer 16 of self-sticking adhesive is applied across a relatively narrow area on the outer surface of the web at or adjacent its leading end 13. This adhesive is applied in fluid form and is thereafter dried, by simple exposure to the air, by mild heat or by heated or dried air currents or otherwise until its surface will not adhere to an uncoated web surface, but will adhere to a similarly dried surface of the same or a similar self-sticking adhesive layer.

A similar layer 17 of self-sticking adhesive is similarly applied to the web adjacent its inner or core end on the opposite surface thereof from that bearing the leading end layer 16. Thus in the illustrated embodiment, the inner or core end layer 17 is on the inner surface of the web. Although the core end layer may be applied directly to the web 26 as shown at 17' in Fig. 3, it is generally preferable that the adhesive layer 17 be applied to a separate end section 19 which is later spliced to the web 26 by suitable means such as a strong adhesive, as indicated at 20 in Fig. 2. The tail end of the end section 19 is preferably left bare for a distance sufficient to permit the application of several uncoated courses 24 thereof to the core 21, as is customary in winding paper web rolls. These initial turns tend to smooth out any irregularities in the core or the web end. For a purpose hereinafter explained, the layer 17 of self-sticking adhesive is applied along a longitudinal section of the inner web surface which is at least as long as the circumference of the finished roll 12. The roll circumference does not vary greatly in different rolls wound for use in the same presses, and accordingly it is feasible to adopt a length of core end adhesive layer which will completely encircle any new roll encountered.

It is not in all cases essential that the self-sticking adhesive layer 17 extend continuously across the web surface. The amount of adhesive used for this layer may be reduced by applying it in a plurality of longitudinally extending strips, as indicated at 22 in Fig. 5.

The core end layer 17 of self-sticking adhesive is applied to the web section 19 or the web 26 and dried thereon as explained above in connection with the leading end adhesive layer 16. With the core end adhesive layer applied directly to the web or secured thereto on a separate end section, the web may be wound up on the core 21 to form the roll 12. The paper web rolls used by newspaper and other presses are very large and heavy, and accordingly the central layers are subjected to considerable pressure from the weight of the overlying courses. To insure against any possibility of adhesion between the surface of the core end adhesive layer and the outer web surface engaging the same in the wound roll, I may provide an adhesive repellent on the opposite side of the web section 19 or web 26 from the adhesive layer 17 or 17'. This adhesive repellent may comprise a wax coating of known composition on the web surface or a strip of thin waxed paper or like adhesive-repellent sheet laid along the surface, both of which expedients are illustrated at 23 in Figs. 2, 3 and 4. When used, the adhesive repellent should be coextensive with the adhesive layer laterally of the web and should extend beyond the adhesive layer toward the core end a distance at least as great as the circumference of the core 21 or of the courses comprising the web tail 24 wound thereon. With this arrangement, sufficient adhesive repellent is provided to completely protect the tail of the web from engagement with the self-sticking adhesive layer 17 or 17' wound over it.

To effect or assist web severance, the web section 19 or web 26 is weakened transversely along

a line below the core end adhesive layer in some suitable fashion as by the perforations 25. In certain cases it may be desirable to firmly secure the web tail 24 to the core 21 below the line of perforations 25, and this may be accomplished by sticking successive layers of the tail to each other with a strong adhesive, as illustrated at 30 in Fig. 4.

It may be preferable to apply the self-sticking adhesive layer 16 directly to the leading end of the web on the roll 12 in the press room or other point where the splice is to be made. Thus in Figs. 1 and 2, the adhesive layer 16 is shown applied directly to the web 26. The leading web end may, however, comprise a separate web section 27 spliced to the web 26 at 28 by a strong adhesive or equivalent means as shown in Figs. 3 and 5.

In order that the section of the web in which the splice is made may be readily located in and discarded from the printed matter or other product, at least one of the self-sticking adhesive-bearing ends of the web may be given a color distinct from that of the main central web portion. This expedient is illustrated in Fig. 5 where both the leading end section 27 and the core end section 19 are colored red or some other distinctive color, the central web 26 being assumed in this instance to be white. Since the core end is larger and in many cases is the only separable web section, it is usually most convenient to apply the color to this section only.

The operation of splicing a web in accordance with the invention has been illustrated in Figs. 6 through 10. In these figures I have illustrated a conventional three-roll reel at 31. As shown in Fig. 6, the reel 31, which turns about a central axis 32, carries three spindles 33, 34 and 35. The spindle 33 is shown carrying a roll 36 from which the running web 37 passes over an idler roller 38 and to the press or other web-consuming equipment, not shown. New rolls 39 and 40 are shown mounted respectively on the spindles 34 and 35. All of the rolls here illustrated have been prepared for splicing as described in detail above. A set of tension belts 41 extends parallel to the roll surfaces around the idler rollers 42, 43, 44, 45, 46 and 47, and a weighted or otherwise biased idler 48 maintains these belts at the desired tension. The belts 41 are preferably driven at a speed substantially equal to that of the running web 37 by suitable means such as a shaft 49 connected to the press or other web-consuming apparatus. The belts 41 are preferably of the narrow type, spaced apart transversely of the web as shown in Fig. 11, and brushes 50 of known construction, supported by suitable means to swing about the pivot 51 and arranged to engage the web 37 between the belts 41 opposite the new roll 39, may be provided if necessary or desirable.

When it becomes necessary to replace the web running from an expiring roll such as 36 with that from a new roll, the reel 31 is first rotated clockwise from the position shown in Fig. 6 to that of Fig. 7 in which the cylindrical surface of the new roll 39 engages the surface of the running web 37 and presses this web between its surface and the belts 41. The rapidly moving web 37 quickly accelerates the new roll 39 to a speed such that its surface velocity equals or approximates the velocity of the running web 37. During this roll acceleration, the self-sticking adhesive layer 16 at the leading end of the web on the new roll repeatedly contacts the running web, but since, as described above, this adhesive is dried to a point at which it does not adhere to the uncoated web surface, neither the acceleration of the new roll nor the normal running of the web 37 are impeded.

After the new roll has attained the proper speed, the running roll continues to run off until the adhesive layer 17 adjacent its core end approaches the new roll 39. During this interval, or during acceleration of the new roll, the brushes 50 may be lowered to cooperate with the belts in applying pressure through the running web against the new roll surface across the entire width of the webs. It should be understood that the use of the brushes is in no way essential to the operation. When the core end layer 17 of self-sticking adhesive on the running web 37 engages the cylindrical surface of the new roll 39, it moves along this surface until it comes opposite and presses against the self-sticking adhesive layer 16 at the leading end of the new web, and thereupon the two adhesive layers cohere and secure the webs tightly together. This mutual engagement of the adhesive layers is insured by the fact that the layer 17 on the running web is as long as or longer than the maximum circumference of the new roll. Immediately after the webs are thus spliced together, the leading end 13 of the web from the new roll is pulled away from the roll surface, the tabs 14 or other web end fastening means on the new roll being separated. The new roll web then becomes the running web, and the reel 31 may be further rotated clockwise to increase the wrap of the straps 41 about its surface during its run as may become necessary. The brushes 50, if employed, may be retracted after the splice is made.

At the time that the splice is made or shortly thereafter, the line of perforations, or equivalent weakened portion 25 of the web or its core section, runs off the expiring roll. At this point, the pull of the web severs it along the perforations, as indicated at 52 in Fig. 9. This web severance may be expedited by fastening the tail of the web to the core, as explained above and illustrated in Fig. 4. In this case, an increased tension is imposed on the web when it has run off to the point that it is fixed to the core, whereupon the web breaks along the line of perforations 25. Instead of so securing the web to the core, severance along the weakened line may be expedited by imposing a drag on the expiring roll through the medium of a spindle brake, indicated by the hand wheel 53 or by equivalent means. The drag so imposed causes severance as the line of perforations 25 runs off the expiring roll.

If desired, the old web may be severed after the splice by a knife 54 or other web-severing part in a known manner. This operation is illustrated in Fig. 10. The knife 54 may be moved to cutting position after the splice is made, either by a manual operation or by known automatic means such as means responsive to the reduction in the diameter of the expiring roll to a predetermined point.

It should be understood that the above described splicing operation is not limited to the use of a conventional three-roll reel, but is equally applicable to a two-roll reel, a roll stand, or any other roll-carrying mechanism capable of bringing a new roll close to a web running from an expiring roll. Further, the adhesives used to form the layers at the leading and core ends of the webs may differ in nature although it is preferred

that both be of the self-sticking type hereinabove described.

The method of the invention effectively splices the web from a new roll to the running web without any reduction in web speed and without the used of any special roll-accelerating means. This avoids the necessity of correlating the diameter of each new roll to the web speed and adjusting a spindle drive roll accelerating mechanism accordingly, and eliminates the use of speed-up belts movable into engagement with each new roll in turn. A more important advantage of the invention is the fact that it wholly eliminates critically timed splicing operations. All that the operator has to do is turn the reel to move the new roll against the running web when the reduction in size of the running roll indicates that it is approaching its end. Thereafter the splicing operation is self-performed by the self-sticking adhesive layer arrangement, and no critically timed apparatus or adjuncts governed in accordance with the angular position of the new roll or otherwise are required.

A particular advantage of my improved method is that it effects an important economy in the use of the web from the web rolls. Thus it permits complete or substantially complete use of the web from each expiring roll without danger that the web will run out before the splice is made. Under prior practices, the operator had to estimate when the running roll was so far depleted that replacement was necessary, and to so time his new roll speed-up and splicing operations as to avoid running out of the old roll before the spice was completed. Such estimates always erred on the side of leaving too much web on the old roll. Such an error was the natural result of an endeavor to avoid missing the splice. If the web ran off the old roll before the splice could be completed, the press or other web-consuming apparatus had to be stopped and rethreaded, and the loss of production time thus occasioned was far more important than the loss of web resulting from premature roll replacement. As a result of the present invention, the point in the running of the expiring web roll at which the splice is made is fixed when the roll is made up and the economic consumption of the web is not dependent upon the judgment of the operator or any other variable factor.

I claim:

1. In a method of splicing the leading end of a web on a new web roll to a web running from an expiring web roll, the steps of applying a layer of self-sticking adhesive to both the outer surface of the web on the new roll substantially at its leading edge and the inner surface of the running web adjacent its inner end, drying the exposed surfaces of said adhesive layers to a point where they will not adhere to the uncoated web but will adhere to each other, contacting the cylindrical surface of the new roll with the inner surface of the running web at a point in advance of said adhesive-carrying layer adjacent the inner end of the running web whereby the new roll is accelerated by the running web to a surface velocity substantially equal to the velocity of the running web and continuing such contact whereby when said adhesive layer on the running web engages said adhesive layer on the new web, the webs are spliced together.

2. In a method of splicing the leading end of a web on a new web roll to a web running from an expiring web roll, the steps of applying a layer of self-sticking adhesive to both the outer surface of the web on the new roll substantially at its leading edge and the inner surface of the running web adjacent its inner end, said adhesive layer on the inner surface of the running web extending longitudinally of that web for a distance at least as long as the circumference of the new web roll, drying the exposed surfaces of the adhesive layers so applied to a point where they will not adhere to an uncoated web but will adhere to each other, removably securing the leading end of the web on said new web roll to the web roll surface, contacting the cylindrical surface of the new roll with the inner surface of the running web at a point in advance of said adhesive-carrying layer adjacent the inner end of the running web whereby the new roll is accelerated by the running web to a surface velocity substantially equal to the velocity of the running web and continuing such contact whereby when said adhesive layer on the running web engages said adhesive layer on the new web, the webs are spliced together.

3. In a method of splicing the leading end of a web on a new web roll to a web running from an expiring web roll, the steps of applying a layer of self-sticking adhesive to both the outer surface of the web on the new roll substantially at its leading edge and the inner surface of the running web adjacent its inner end, said adhesive layer on the inner surface of the running web extending longitudinally of that web for a distance at least as long as the circumference of the new web roll, drying the exposed surfaces of the adhesive layers so applied to a point where they will not adhere to an uncoated web but will adhere to each other, removably securing the leading end of the web on said new web roll to the web roll surface, contacting the cylindrical surface of the new roll with the inner surface of the running web at a point in advance of said adhesive-carrying layer adjacent the inner end of the running web whereby the new roll is accelerated by the running web to a surface velocity substantially equal to the velocity of the running web, continuing such contact whereby when said adhesive layer on the running web engages said adhesive layer on the new web, the webs are spliced together and thereafter severing the running web from the expiring roll.

4. In a method of splicing the leading end of a web on a new web roll to a web-running from an expiring web roll, the steps of applying to both the surface of the web on the new roll adjacent its leading outer end and the surface of the running web adjacent its inner end, a layer of self-sticking adhesive dried to a point where the exposed surfaces of such layers will not adhere to an uncoated web surface but will adhere to each other, and pressing the surface of the running web which bears the adhesive layer against the surface of the new roll which bears the adhesive layer whereby the new roll is accelerated to web speed and thereafter the web of said new roll is spliced to the running web when said layer of adhesive on the running web contacts said layer of adhesive on the new roll web.

5. A web roll arranged for making a high speed splice comprising a substantially cylindrical roll wound from a continuous web around a central core, a layer of self-sticking adhesive adhering to one surface of the web substantially transversely of its leading outer end and having an exposed surface capable of tenaciously adhering to a similar adhesive layer surface but incapable of adhering to the uncoated web surface, and a

layer of similar self-sticking adhesive adhering to the other surface of the web adjacent its inner c re end for a longitudinal distance at least equal to the circumference of the web roll.

6. A web roll arranged for making a high speed splice comprising a continuous web wound into a substantially cylindrical roll about a central core, a layer of self-sticking adhesive adhering to the outer surface of the web substantially transversely of its leading end and having an exposed surface capable of tenaciously adhering to a similar layer surface but incapable of adhering to the uncoated web surface, and a layer of similar self-sticking adhesive adhering to the inner surface of the web adjacent its core end for a longitudinal distance at least equal to the circumference of the web roll, the portion of the web adjacent at least one of said adhesive layers having a color distinct from the color of the remainder of the web of said roll.

7. A web roll arranged for making a high speed splice comprising a continuous web wound into a substantially cylindrical roll about a central core, a layer of self-sticking adhesive adhering to the outer surface of the web substantially transversely of its leading end and having an exposed surface capable of tenaciously adhering to a similar layer surface but incapable of adhering to the uncoated web surface, a layer of similar self-sticking adhesive adhering to the inner surface of the web adjacent its core end for a longitudinal distance at least equal to the circumference of the web roll, and means for releasably securing the leading end of the web to the cylindrical surface of the roll.

8. A web roll arranged for making a high speed splice comprising a continuous web wound into a substantially cylindrical roll about a central core, a layer of self-sticking adhesive adhering to the outer surface of the web substantially transversely of its leading end and having an exposed surface capable of tenaciously adhering to a similar layer surface but incapable of adhering to the uncoated web surface, a layer of similar self-sticking adhesive adhering to the inner surface of the web adjacent its core end for a longitudinal distance at least equal to the circumference of the web roll, and a layer of adhesive-repellent material between said core end adhesive layer and the outer surface of the web lying directly beneath such adhesive layer in the wound roll.

9. A web roll arranged for making a high speed splice comprising a continuous web wound into a substantially cylindrical roll about a central core, a layer of self-sticking adhesive adhering to the outer surface of the web substantially transversely of its leading end and having an exposed surface capable of tenaciously adhering to a similar layer surface but incapable of adhering to the uncoated web surface, a layer of similar self-sticking adhesive adhering to the inner surface of the web adjacent its core and for a longitudinal distance at least equal to the circumference of the web roll, and a layer of adhesive-repellent material on the outer surface of said web adjacent its core end extending along the area of said web carrying said core end adhesive layer and rearwardly of said layer a distance sufficient to underlie and engage the innermost turn of the web bearing said inner core end adhesive layer.

10. A web roll arranged for making a high speed splice comprising a continuous web wound into a substantially cylindrical roll about a central core, a layer of self-sticking adhesive adhering to the outer surface of the web substantially transversely of its leading end and having an exposed surface capable of tenaciously adhering to a similar layer surface but incapable of adhering to the uncoated web surface, a layer of similar self-sticking adhesive adhering to the inner surface of the web adjacent its core end for a longitudinal distance at least equal to the circumference of the web roll, and a layer of adhesive-repellent paper disposed between successive turns of said roll along the portion thereof bearing said core end adhesive layer.

11. A web roll arranged for making a high speed splice comprising a continuous web wound about a central core into a substantially cylindrical roll, a layer of self-sticking adhesive adhering to the outer surface of said web substantially transversely of its leading end and having an exposed surface capable of tenaciously adhering to a similar adhesive layer surface but incapable of adhering to the uncoated web surface, a layer of similar self-sticking adhesive adhering to the inner surface of the web adjacent to its core end but spaced therefrom by a distance at least equal to the circumference of the core of the web roll, said inner surface adhesive layer extending longitudinally of the web for a distance at least equal to the circumference of the roll, and a weakened portion extending transversely across the web between said inner surface adhesive layer and the core end of the web.

12. A web roll arranged for making a high speed splice comprising a continuous web wound about a central core into a substantially cylindrical roll, a layer of self-sticking adhesive adhering to the outer surface of said web substantially transversely of its leading end and having an exposed surface capable of tenaciously adhering to a similar adhesive layer surface but incapable of adhering to the uncoated web surface, a layer of similar self-sticking adhesive adhering to the inner surface of the web adjacent to its core end but spaced therefrom by a distance at least equal to the circumference of the core of the web roll, said inner surface adhesive layer extending longitudinally of the web for a distance at least equal to the circumference of the roll, means for attaching the inner core end of said web to the roll core, and a weakened portion extending transversely across the web between its point of attachment to the core and said inner surface adhesive layer.

13. A web roll as defined in claim 5 in which the adhesive-carrying core end portion is formed separately from the main central portion of the web and connected thereto.

14. A web roll as defined in claim 6 in which the adhesive-carrying core end portion is formed separately from the main central portion of the web and connected thereto.

15. A web roll as defined in claim 8 in which the adhesive-carrying core end portion is formed separately from the main central portion of the web and connected thereto.

16. A web roll as defined in claim 5 in which at least one of the adhesive-carrying end portions is formed separately from the main central portion of the web and connected thereto.

17. A web roll as defined in claim 11 in which at least one of the adhesive-carrying end portions is formed separately from the main central portion of the web and connected thereto.

18. A web roll as defined in claim 12 in which at least one of the adhesive-carrying end portions

is formed separately from the main central portion of the web and connected thereto.

19. A web section for attachment to the core end of a paper web to be wound into a roll for use in high speed splicing comprising a section of paper web and a layer of self-sticking adhesive adhering to one surface of said section and having an exposed surface incapable of adhering to uncoated paper but capable of tenaciously adhering to a similar adhesive surface upon contact therewith, said adhesive layer extending longitudinally of the web section for a distance at least as great as the circumference of the wound paper web roll to which the web section is to be attached.

20. A web section for attachment to the core end of a paper web to be wound into a roll for use in high speed splicing comprising a section of paper web, a layer of self-sticking adhesive adhering to one surface of said section and having an exposed surface incapable of adhering to uncoated paper but capable of tenaciously adhering to a similar adhesive surface upon contact therewith, said adhesive layer extending longitudinally of the web section for a distance at least as great as the circumference of the wound paper web roll to which the web section is to be attached, and a layer of adhesive-repellent material on the other surface of said web section.

21. A web section for attachment to the core end of a paper web to be wound into a roll for use in high speed splicing comprising a section of paper web, a layer of self-sticking adhesive adhering to one surface of said section and having an exposed surface incapable of adhering to uncoated paper but capable of tenaciously adhering to a similar adhesive surface upon contact therewith, said adhesive layer extending longitudinally of the web section for a distance at least as great as the circumference of the wound paper web roll to which the web section is to be attached, and a layer of adhesive-repellent material on the other surface of said web section extending beyond the end of said adhesive layer in the direction of the core end of said web section.

22. A web section for attachment to the core end of a paper web to be wound into a roll for use in high speed splicing comprising a section of paper web and a layer of self-sticking adhesive adhering to one surface of said section along a part of its length and having an exposed surface incapable of adhering to uncoated paper but capable of tenaciously adhering to a similar adhesive surface upon contact therewith, and a weakened portion extending transversely of said web at a point adjacent one end of said adhesive layer.

23. A web section for attachment to the core end of a paper web to be wound into a roll for use in high speed splicing comprising a section of paper web and a layer of self-sticking adhesive adhering to one surface of said section along a part of its length and having an exposed surface incapable of adhering to uncoated paper but capable of tenaciously adhering to a similar adhesive surface upon contact therewith, said adhesive layer extending longitudinally of the web section for a distance at least as great as the circumference of the wound paper web roll to which the web section is to be attached, and a weakened portion extending transversely of said web at a point adjacent one end of said adhesive layer.

24. A paper web to be wound into a roll for use in making a high speed web splice comprising a continuous web and areas of self-sticking adhesive adhering to said web on opposite surfaces thereof adjacent opposite ends thereof, said adhesive areas having exposed surfaces capable of cohering to like surfaces but incapable of adhering to an uncoated web surface.

25. A web roll arranged for making a high speed splice comprising a substantially cylindrical roll wound from a continuous web around a central core, and a layer of self-sticking adhesive adhering to one surface of the web adjacent its inner core end for a longitudinal distance at least equal to the circumference of the web roll and having an exposed surface capable of tenaciously adhering to a similar adhesive layer but incapable of adhering to the uncoated web surface.

26. A web roll arranged for making a high speed splice comprising a continuous web wound into a substantially cylindrical roll about a central core, a layer of self-sticking adhesive adhering to the inner surface of the web adjacent its core end for a longitudinal distance at least equal to the circumference of the web roll and having an exposed surface capable of tenaciously adhering to a similar layer surface but incapable of adhering to the uncoated web surface, and a layer of adhesive-repellent material between said core end adhesive layer and the outer surface of the web lying directly beneath such adhesive layer in the wound roll.

27. A web roll arranged for making a high speed splice comprising a continuous web wound about a central core into a substantially cylindrical roll, a layer of self-sticking adhesive adhering to the inner surface of the web adjacent its core end but spaced therefrom by a distance at least equal to the circumference of the core of the web roll and having an exposed surface capable of tenaciously adhering to a similar adhesive layer surface but incapable of adhering to the uncoated web surface, said inner surface adhesive layer extending longitudinally of the web for a distance at least equal to the circumference of the roll, and a weakened portion extending transversely across the web between said inner surface adhesive layer and the core end of the web.

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