Nov. 5, 1957 E. J. MELOCHE 2,812,145

METHOD OF AND MEANS FOR SPLICING WEBS

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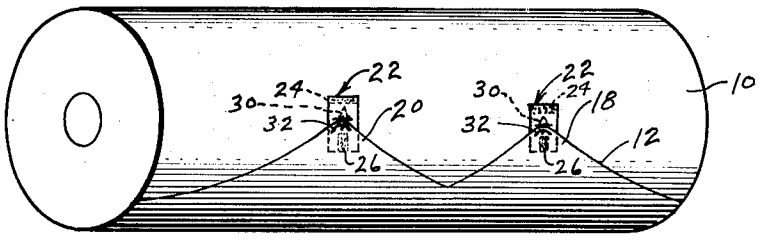


Fig. 1.

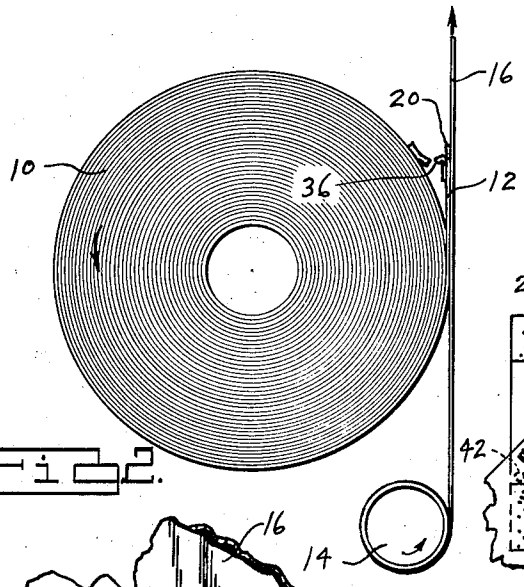


Fig. 2.

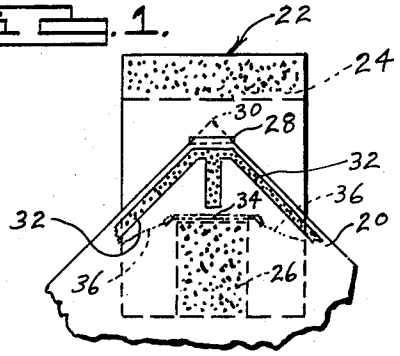


Fig. 3.

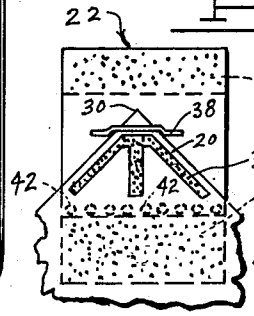


Fig. 4.

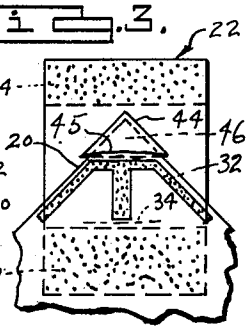


Fig. 5.

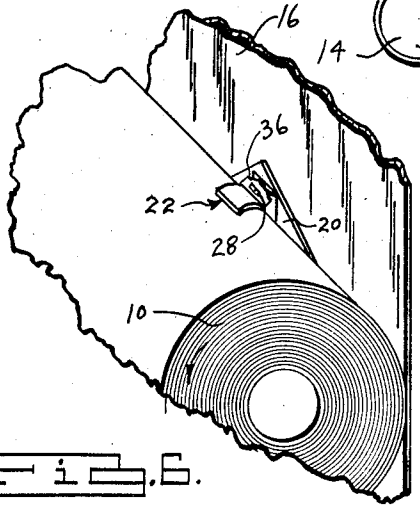


Fig. 6.

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METHOD OF AND MEANS FOR SPLICING WEBS

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9 Claims. (Cl. 242—58.5)

This invention relates to a novel method of and a means for splicing the leading edge of a new web roll to a web which is running to a printing press, or the like, from a roll which is about to expire.

In the past, many methods and devices have been provided for splicing the leading end of a new web on a roll, to the web of an expiring roll. Most of these devices comprise an adhesive tab adapted to hold the leading end of the new web against the roll, and, to adhere to the web of the expiring roll so as to complete the splicing operation. These prior art tabs have proved to be inefficient in use, because of their inherent method of operation, wherein it is required that they be spliced to the expiring roll, and be broken or ruptured at the same time, to permit the leading end of the new web to be detached from the next course of the roll. In many cases the required simultaneous splicing and rupturing of the tab is not completed, and a resultant loss of machine and operator time occurs.

Accordingly, it is the primary object of this invention to provide a novel method of, and a tab for, splicing the leading edge of a new web roll to the web of an expiring roll, and which tab is adapted to be spliced to the web of the expiring roll before being broken, to permit the new web to unroll.

It is another object of this invention to provide an improved tab of the class described which is adapted to be used on any automatic paster, and, which can be used to make a splice at any speed.

It is a further object of this invention to provide an improved tab of the class described which may be made in various shapes, but which is preferably made in a rectangular shape.

It is a still further object of this invention to provide a novel and improved tab of the class described which may be used singly or plurally, as desired, and, in the use of which the breaking and splicing actions are not simultaneous, whereby, the webs are permitted to be securely spliced together before the breaking of the tab occurs.

It is another object of this invention to provide a tab, for use in splicing a new web to an expiring web, which is efficient in use and operation, simple in construction, and economical of manufacture.

Other objects, features and advantages of this invention will be apparent from the following detailed description and appended claims, reference being had to the accompanying drawing forming a part of the specification wherein like reference numerals designate corresponding parts of the several views.

In the drawing:

Fig. 1 is a perspective view of a web roll provided with two tabs, for holding the leading edge of the web in position, in accordance with the principles of the invention;

Fig. 2 is a diagrammatic view illustrating the operation of the splicing tab of the invention;

Fig. 3 is a fragmentary plan view of a new roll web

end prepared for splicing in accordance with the invention;

Fig. 4 is a fragmentary plan view of a new roll web end prepared for splicing in accordance with a modified tab of the invention;

Fig. 5 is a fragmentary plan view of a new roll web end prepared for splicing in accordance with another modified tab of the invention; and,

Fig. 6 is a fragmentary diagrammatic perspective view illustrating the operation of the splicing tab of the invention.

Before explaining in detail the present invention, it is to be understood, that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawing, since the invention is capable of other embodiments and of being practiced or carried out in various ways. Also, it is to be understood, that the phraseology and terminology employed herein is for the purpose of description and not limitation.

In the drawing, the numeral **10** indicates a new web roll having a leading edge **12** which is to be spliced to the web **16** on the expiring web roll **14**. In accordance with the principles of the invention, the leading edge **12** on the new web roll **10** is cut at a number of points so as to form points, as **18** and **20**, which lead forward from the web. Although the preferred embodiment in Fig. 1 shows two of these points, it will be understood, that one, or more than two may be used.

After the leading edge **12** has been formed with the points **18** and **20**, the web leading edge **12** is then securely fastened to the next course of the web by means of the tabs **22**. The tabs **22** are preferably rectangular in shape, although they may be formed in any other desirable shape, as a triangular shape. Each of the tabs **22** is provided on the upper face thereof, at one end thereof with a centrally disposed adhesive spot, as **26**, which is adapted to be applied to the underside of the points **18** and **20**, so as to leave about ⅞" to 1" overlap of said points beyond said adhesive spot.

Immediately forward of the adhesive spot **26** is a transverse slit **34**, which provides a weakened area in the tab, for a purpose more fully described hereinafter. The tab **22** is provided with a transverse adhesive spot on the underside thereof, on the end opposite the adhesive spot **26**. After the tab **22** has been applied to the underside of the points **18** and **20**, the overlapping point portion is held against the upper surface of the tab **22** by inserting the tip **30** through a slot **28** in the tab. The tab **22** is then secured to the next course of the web roll **10** by applying the adhesive area **24**, on the underside of the tab, thereto.

The ⅞" to 1" overlapping portion of each point **18** and **20**, which portion is measured from the point **30** back to the front edge of the adhesive area **26**, is provided on the outer, or upper side thereof with an adhesive material as **32**. The adhesive **32** may be arranged in any suitable manner on the point.

After the new web roll **10** has been prepared in the aforedescribed manner, it is ready for splicing to the web of an expiring roll. As shown in Fig. 2, the new web roll **10** is pressed against the expiring web **16**, and, as shown by the arrows on the rolls, both rolls are rotating in the same direction. When the adhesive spot **32** on the outer surface of the pointed areas **18** and **20** engage the web **16**, the leading edge **12** of the web will be stuck to the expiring web **16**. Continued rotation of the new roll **10** results in the point **30** of each pointed area **18** and **20** being pulled out of the slot **28**. The slight time interval that is necessary for this action permits the adhesive **32** to be firmly stuck to the web **16**.

After the tip **30** of each pointed area is pulled out of the slots **28**, continued rotation of the roll **10**, and the motion of web **16**, carrying the leading edge **12**, away from the roll **10**, causes the tab to be broken or ruptured along the lines **36**. The break lines **36** will start at the ends of the slit **34** and extend outwardly therefrom. Half of the tab remains on the web roll **10** and the other half is attached to the leading end of the web and passes into the press with the expiring web.

Fig. 4 shows a modified tab **22**, in which the slot **34** is deleted and a suitable strip **38** is secured to the top of the tab for holding down the tip **30** of the pointed areas **18** and **20**. The adhesive area or spot **26** has been increased in width, in this modification, so as to cover the entire end of the tab and is indicated by the numeral **40**. In addition, the slit **34** has been replaced by a plurality of perforations, as **42**, to provide a weakened area along which the tab may break easily during the splicing action.

Fig. 5 shows a further modified tab **22**, in which the tip **30** is held down against the top of the tab by means of a triangularly shaped envelope **44**. The envelope **44** is open along the end **45** and the tip **46** of the pointed area **20** is slidably mounted in the envelope **44**. The adhesive area **26** is also enlarged to the full width of the tab, as indicated by the numeral **40**.

The modifications of Figs. 4 and 5 function in the same manner as described hereinbefore for the embodiment of Fig. 1.

Although the invention has been described and illustrated as using two of the tabs **22**, it will be understood, that any desirable number of these tabs may be employed in the practice of the invention. Furthermore, the pointed areas **18** and **20** may be formed rectangularly, or in any other suitable shape.

While it will be apparent that the preferred embodiments of the invention herein disclosed are well calculated to fulfill the objects above stated, it will be appreciated that the invention is susceptible to modification, variation and change without departing from the proper scope or fair meaning of the subjoined claims.

What is claimed is:

1. A method of splicing a new web roll to an expiring web comprising: forming the leading edge of the new web with a plurality of pointed areas; securing a tab to the underside of each of said pointed areas, but leaving the tip of said pointed areas free; releasably securing the free tip to said tab; fixedly securing the part of said tab opposite to the part secured to the pointed area to the next course of said new web roll; applying an adhesive to the outer surface of said free tip; rotating said new web roll in the same direction as the expiring roll; pressing the new web roll into engagement with the expiring web; whereby, the adhesive on the outer surface of said free tip will adhere to the expiring web, the tab will be broken by the motion of the adhered leading edge of the new web to the expiring web, and the splicing action will be effected.

2. A tab for use in holding down the leading edge of a rotating web roll prior to a web splicing operation, comprising a sheet-like piece of material having an adhesive on the outer face of the leading edge thereof for attaching said tab to the underside of the leading edge of a new web roll; a transverse line of weakness in said tab immediately forward of said adhesive; a spot of adhesive on the inner face of the trailing edge of said tab for attaching said tab to the next course of the web of said web roll; and means on said tab for releasably holding down the free tip of the leading edge of the new web roll.

3. A method of splicing a new web roll to an expiring web comprising the steps of: first, forming the leading edge of the new web with a plurality of pointed areas; second, securing one end of a tab to the underside of each of said pointed areas at a point removed from the tip of said pointed areas, thereby leaving the tip free; third, releasably securing the free tip to said tab; fourth, fixedly securing the other end of said tab to the next course of said new web roll; fifth, applying an adhesive to the outer surface of said free tip; sixth, rotating said new web roll in the same direction as the expiring roll; seventh, moving the rotating new roll into rolling engagement with the expiring web to adhere the adhesive covered tip to the expiring web; eighth, continuing the rotation of both the new roll and the expiring web to cause the tab to be broken, whereby the splicing action is completed.

4. In combination with a rotary web roll, a device for releasably securing the leading end of the roll web to the roll surface while the roll is rotated and splicing said end to a moving expiring web and releasing it from the roll surface after the roll is rotating, comprising: a web end engaging member of sheet material having a layer of adhesive on its upper surface on one end thereof for securing it to the underside of the leading end of the web at a point removed from the leading edge of the leading end of the web; a roll surface engaging portion on said member comprising the other end of said member which is provided with a layer of adhesive on the under surface thereof; means for releasably holding the leading end of the web in engagement with said member; and a layer of splicing adhesive on the outer surface of said leading end of the web.

5. A device for use in splicing the leading end of a web on a rotary new web roll to a running web in the manner described comprising: a sheet-like piece of material having an adhesive on the upper surface thereof, on one end thereof, for securing it to the leading end of the web on a new roll at a point removed from the edge of said leading end; a roll surface engaging other end of said material having a layer of adhesive on its under surface for securing it to the surface of the next course of the new roll, and means for releasably retaining the leading edge of said leading end of the web against the material until the splicing action is begun.

6. The invention as set forth in claim 5 wherein said means for releasably retaining the leading edge of the leading end of the web comprises a slit in said material through which said leading edge is disposed in a releasable engagement therewith.

7. The invention as set forth in claim 5 wherein said means for releasably retaining the leading edge of the leading end of the web comprises a strap on said material under which the leading edge is disposed in a releasable engagement therewith.

8. The invention as set forth in claim 5 wherein said means for releasably retaining the leading edge of the leading end of the web comprises a pocket on said material which is open in the direction of the leading edge of the web and into which said leading edge is adapted to slide in a releasable engagement therewith.

9. The invention as set forth in claim 5 wherein said material is provided with a line of weakness immediately forward of the adhesive on the upper side thereof.

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