Oct. 31, 1944. J. E. McMULLEN 2,361,857

ROLL WEB TERMINAL

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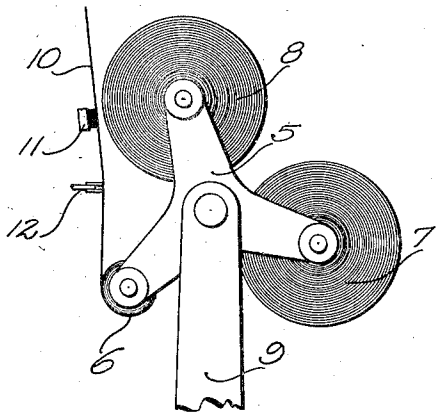


Fig. 1.

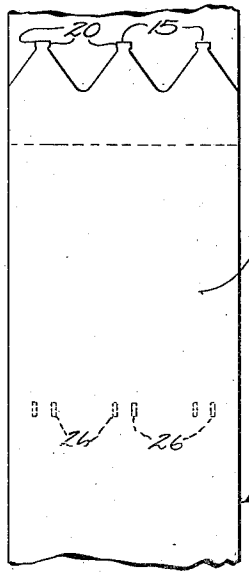


Fig. 4.

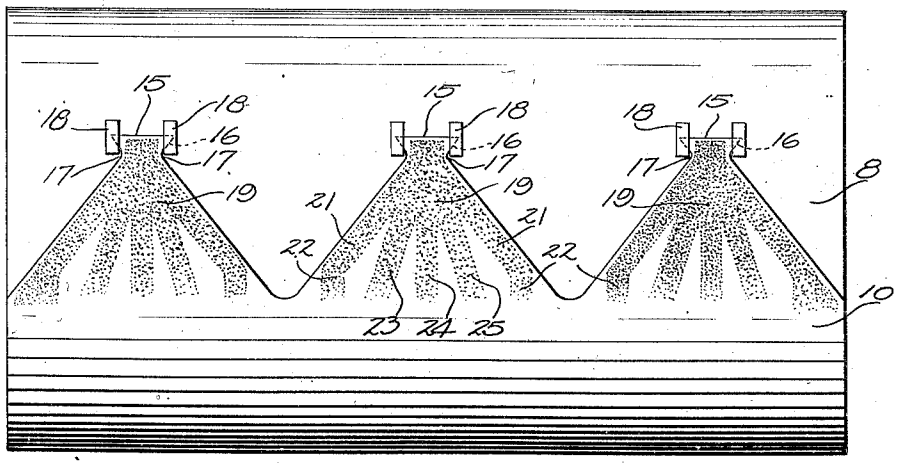


Fig. 2.

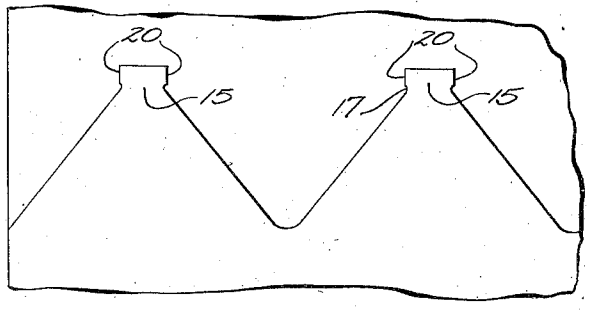


Fig. 3.

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ROLL WEB TERMINAL

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10 Claims. (Cl. 242—58)

This invention relates to improvements in roll web terminals. It has particular reference to the preparation of a paper web for a high speed paster joint.

It is the primary object of the invention to provide a paster joint which will hold the ends of a roll web tightly to the roll until the paster joint is effected and will then smoothly and uniformly release such end with a minimum of strain so that the resulting joint will almost invariably be perfect.

In web feeding devices, such as are used on printing presses and the like, it has become common to join the web of a nearly exhausted roll to the end of the web of a full roll so that the web may continue to be fed at substantially constant speeds without interruption for the making of the joint. A poor joint means serious delay and may necessitate a complete re-threading of the web through the press. In practical use, no paster failures or breakages have occurred attributable to the web end construction herein disclosed.

Other advantages and objectives of the invention will be apparent to those skilled in the art upon examination of the following disclosure of the invention.

In the drawing:

Fig. 1 is a diagrammatic view in end elevation of a reel supporting a substantially exhausted roll and a plurality of full rolls, the web from the exhausted roll being diagrammatically shown in proximity to one of the full rolls in preparation for making a paster.

Fig. 2 is a view on an enlarged scale showing the web end construction embodying this invention in front elevation.

Fig. 3 is a plan view of the joint which results from using my improved web end construction in a paster.

Fig. 4 is a plan view on a reduced scale of a web section with paster joint and severed tabs resulting from my invention.

Like parts are identified by the same reference characters throughout the several views.

The standard 9 supports a reel 5 which carries the arbors for a number of rolls 6, 7 and 8. In preparation for making a paster or joint, the full roll is set into rotation at peripheral speed approximating the linear rate of travel of the web 10 and thereupon the web 10 from the nearly exhausted roll 6 is forced by the brush 11 into close proximity to the full roll 8. As the brush 11 brings the web 10 into contact with the web of the full roll 8 at the joint, the web 10 is severed by a knife at 12 and the paster is effected. The web 10 is then withdrawn from the full roll 8 until that roll, in turn, is exhausted, whereupon the operation is repeated.

The web 10 on roll 8 is prepared for the paster in accordance with the present invention, as shown in Fig. 2. It is provided with one or more reduced ends 15, the number of which will depend upon the width of the web and the resulting length of the roll. Adjacent the extremity of each of the ends 15, I provide laterally projecting tongues at 16 formed by undercutting the side margins of the web end at 17. Laterally beyond the undercut margin 17 of the web 10, each of the tongues 16 is secured in some manner to the underlying face of the next convolution of the web at the surface of roll 8. The manner in which I prefer to effect this connection is to use gummed tabs 18, preferably of a web-matching color, the inner margins of which are preferably parallel to each other and to the longitudinal center line of the web end. These tabs preferably, though not necessarily, completely span the respective tongue 16 and are adhesively joined not only to the tongues, but to the face of the underlying portion of the web. The tabs may, as shown, be wider than the projection of tongues 16 so that each tongue is secured all about its margins to the underlying web, this being preferred to the use of narrower tabs. The fact that the tabs, regardless of their width, span the tongues assures against any torsional stress or lateral stress of the web during the paster. It also holds the web ends 15 severally to the face of the roll with security.

The ends 15 of the web are now coated with a tacky adhesive at 19 to which the face of the web will readily adhere during the pasting operation. The pattern of adhesive shown is preferred. The entire surface of the extremity of each end 15, save for a fraction of an inch along the margins, is coated. Thence bands 21 extend in spaced relation to the margins and finally turn parallel to the center line at 22. Other divergent bands 23, 24, 25 are in the intermediate space.

When the pasting operation occurs and the running web is forced into contact with the tacky adhesive 19, the running web becomes integrally joined to the web of the full roll and pulls the ends from the full roll to move with the running web. In this operation, it is the tendency for the web ends to tear parallel to the longitudinal center line of the web. The fact that the inner margins of the tabs 18 are parallel to that center line encourages this natural tendency

and severs the tabs with a shearing action. The tongues are, therefore, sheared neatly as indicated at 20 in Fig. 3. The fact that the undercut margins 17 of the respective web ends intersect the lines upon which the tearing occurs results in positive assurance that such margins will intercept the tear, in each instance, so that there will be no possibility of the tear extending into the web proper. Despite the fact that the web ends are anchored to the base of the roll with the greatest security, the anchored tongues are torn off with uniformity in every operation.

The tabs and underlying severed ends of tongues 16 remain on the face of the web as indicated at 26 in Fig. 4. So neatly are the tongues severed and so inconspicuous are they beneath the web-matching tabs that this portion of the web may be printed and used, reducing by at least one half the amount of wastage heretofore involved in a paster.

I claim:

1. A web wound in a roll and having an end portion of reduced width coated at least in part with a tacky adhesive, and at least one tongue provided with means connecting it with the underlying face of the rolled web and adjacent which said tongue will tear in a high speed paster, said web end portion having an undercut margin intersecting the line longitudinally of the web upon which said tongue will tear.

2. A web wound in a roll and having an outer end portion of reduced width held to the face of the roll, said end having at least one laterally extending tongue and an undercut margin extending toward the center line of said end portion to form the tongue, and a tab connecting the tongue to the roll along a line extending in the general direction in which the roll is wound.

3. The structure of claim 2 wherein said tab spans the tongue and is provided with means connecting the tab to the roll both within and beyond the tongue.

4. The structure of claim 2 wherein the tab has a margin approximately paralleling the margin of the web and within which said tongue tends to be severed upon a line longitudinally of the web and intersecting said undercut web margin.

5. The structure of claim 2 wherein the tab means completely covers the end of the tongue and is adhesively fastened to the tongue and to the roll about the tongue margins both within and beyond the tongue.

6. A web having an end portion of reduced width provided near its terminus with oppositely and laterally projecting tongues, said end portion having undercut margins beyond which said tongues project, said web being wound in a roll having a face underlying said tongues and to which said tongues are connected outside of said undercut margins.

7. A web having an end portion of reduced width provided near its terminus with oppositely and laterally projecting tongues, said end portion having undercut margins beyond which said tongues project, said web being wound in a roll having a face underlying said tongues, together with tabs spanning the tongues outside of the undercut margins of the web and adhesively connected to the underlying roll face.

8. A web having an end portion of reduced width provided near its terminus with oppositely and laterally projecting tongues, said end portion having undercut margins beyond which said tongues project, said web being wound in a roll having a face underlying said tongues, together with tabs spanning the tongues outside of the undercut margins of the web and adhesively connected to the tongues and the adjacent portion of the underlying roll face, the tabs having margins approximately parallel to each other and to the center line of the web.

9. The device of claim 8 in which the tabs match the web and substantially completely cover the ends of the tongues.

10. A web wound in a roll, having its outer end portion provided with an extension having sides terminating in laterally extending tongues, in combination with narrow tabs of slight tensile strength, each spanning one of the tongues in the general direction of the web and in a position laterally offset from the side from which said tongue extends and connected to the underlying face of the roll both within and beyond the tongue, whereby a moving web in paster-joint connection with said tapered end portion may tear such end portion from the tongues and the underlying face of the roll without material distortion of either web and without tearing said sides.

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