United States Patent

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[54] REINFORCES ROLLS OF NEWSPRINT
2 Claims, 2 Drawing Figs.

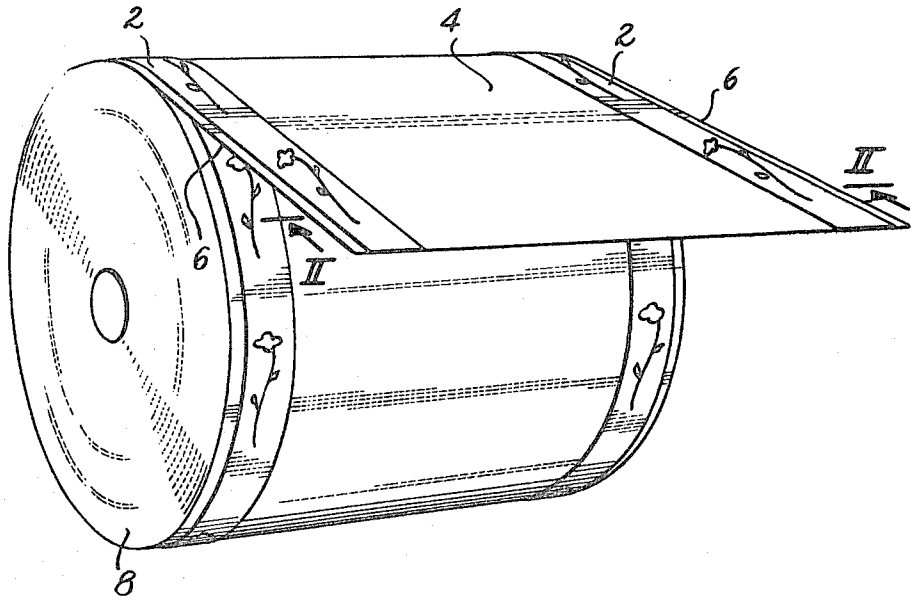
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[50] Field of Search ..... 206/59 (M), 59 (E), 59 (C); 156/277, 233; 242/58.5; 281/34

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ABSTRACT: A roll of newsprint obtained by directly securing thin aluminum metal foil strips having a thickness of from 4 to 15 microns, at least adjacent both marginal edges of the newsprint.



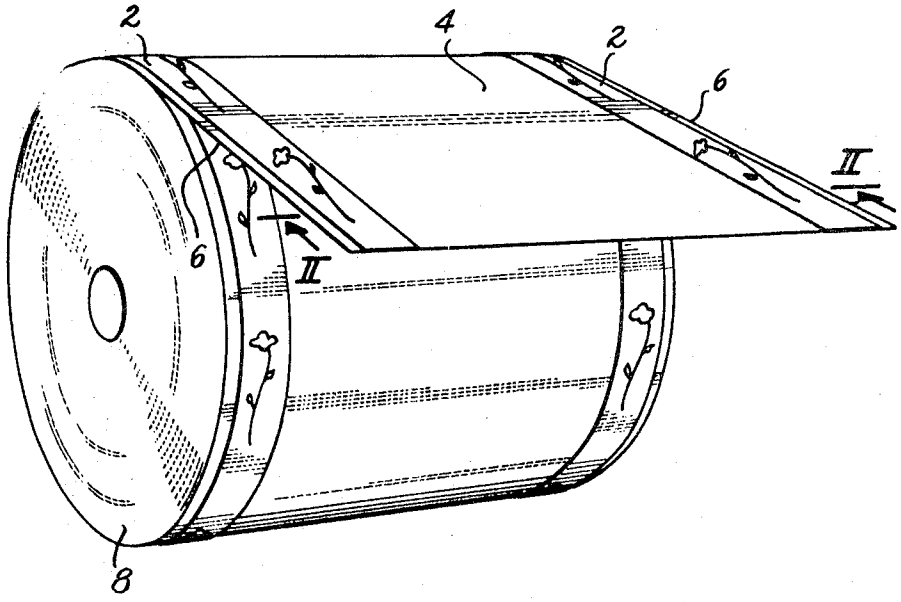


FIG. 1

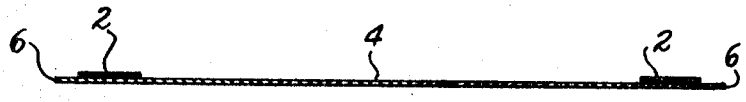


FIG. 2

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REINFORCES ROLLS OF NEWSPRINT

The present invention relates to a process for producing newsprint and the subsequent roll of newsprint obtained thereby, to be used in preparing newspapers and periodicals.

In U.S. Pat. No. 3,335,044 the present applicant set forth a process for preparing a periodical having an applied metallized strip printed in color on at least one page thereof, which comprised the steps of: printing at least one metallized strip in at least one color; gluing the unprinted side of the strip onto a roll of printing paper so that it extends continuously for the entire length of the paper parallel to the unrolled length of the paper and then feeding the paper and applied strip through a rotary printing press so as to print, in black and white, the portions of the paper not covered by the at least one strip.

Experience has since shown that if only one metallized strip is glued onto printing paper, that when this printing paper is rewound onto a core, to be subsequently fed through a rotary printing press, the high rewinding speed of the printing paper causes the single metallized strip to act as an unbalanced weight therefore unbalancing the core and causing an uneveness in the rewound roll. Furthermore, because of the added thickness of the aluminum on only one portion of the rewound roll, a distorted roll having a bulged portion, where the layers of aluminum are piled one upon the other, is formed. Rolls of newsprint formed in uneven rolls or with bulged portions thereon are not only nonaesthetically pleasing, and therefore hard to sell to a potential customer, but also cause problems in handling, packaging and are not easily adaptable so as to be placed on a conventional rotatable printing press. Also, if more than one aluminum strip is randomly placed on a roll of newsprint, the above-mentioned problems will be encountered and in certain cases even multiplied.

It has also been suggested that a preprinted metal foil having a backing could be glued to a printing paper simultaneously with it being printed upon in black and white. But this type of a process necessitates a special attachment on the printing press for the metal foil and because of the forces and speed involved, either the foil strip or the paper being printed and glued at the same time is subject to breaking or tearing and therefore shutdown of the machine while repairs are being made. This type of a system is not feasible in a large daily operation, such as with a large metropolitan newspaper because time is of the essence and any stoppage would be disastrous to the release of a newspaper on time.

Through a long process of experimentation applicant has discovered that if at least two aluminum strips, having a thickness of not more than 15 microns, are placed, one along each marginal edge of the roll of newsprint, that the above-mentioned difficulties will be eliminated and a product having many advantages, unforeseen by the prior art, will result.

By utilizing at least two aluminum strips having a thickness of not more than 15 microns and attaching one strip along each marginal edge of the newsprint, the newsprint will be perfectly balanced and therefore evenly wound and unwound onto a core. Furthermore, since the aluminum strips are very thin and on both edges of the newsprint, they will not cause bulged portions to appear on the rerolled newsprint. Any further aluminum strips which may be added between the two marginal edge strips will not effect the balance of the core nor the thickness of the rolled newsprint.

These attached aluminum strips are printed before their attachment to the newsprint, in one or more colors and can each correspond to an advertisement or decoration or may be merely printed so as to be decoratively neutral when applied to the newsprint, since when the newsprint is printed in black and white in a rotary press, the ink used therein will not stick to the aluminum strips.

In any of the above-mentioned cases, the two aluminum strips, one attached on each side of the newsprint, will strengthen the newsprint, prevent any tearing from occurring in the newsprint when being fed through a rotary printing press and also prevent any waves or distortion from being formed in the paper when fed through a rotary press. The two

aluminum strips, one attached along each marginal edge will act as stiffeners and evenly distribute the forces applied to the newsprint fed through the rotary press. Furthermore, should, for some undetermined reason, tears start near either edge of the newsprint, the aluminum strips will prevent these tears from progressing further and therefore prevent the newsprint from becoming completely torn and causing a shutdown of the printing press.

Applicant's studies have also shown that the aluminum strips must contain no backing material and must be directly attached to the newsprint by gluing or other similar means. Furthermore, these aluminum strips should preferably be of such a width that the two edge strips taken together are the same width as a column found in an ordinary newspaper or magazine, or a multiple of such column width.

An object of the instant invention is the production of a roll of newsprint to be used in preparing a newspaper or a periodical, which newsprint will be of increased strength.

Another object of the present invention is the production of a consistent roll of newsprint having at least two thin aluminum strips of advertising or decorative material directly attached thereto.

A further object of the present invention is a process for producing an increased strength roll of newsprint which may have advertisements or decorative material directly attached thereto.

FIG. 1 is a perspective view of a roll of newsprint, the end of which is partially unwound to clearly show the glued and color-printed aluminum strips; and

FIG. 2 is a transverse sectional view of the sheet of paper of FIG. 1, the thickness being considerably exaggerated.

Briefly, in accordance with one aspect of the invention, the foregoing and other objects are attained by first directly gluing a thin strip of aluminum foil 2, having a thickness of not more than 15 microns, directly on a sheet 4 of unrolled newsprint along at least both marginal edges 6 thereof and then rewinding this newsprint onto a core so as to form a roll 8 which may then be stored and used some days later to be fed into a rotary printing press so as to print, in black and white, the blank portions of the paper.

According to the process of this invention, at least two thin unbacked aluminum strips 2 are cut to suitable widths. These strips may be then printed or left blank, in accordance with their usage. The unbacked printed or unprinted aluminum strips are then directly glued, according to well-known procedures, one on each marginal edge of a roll of paper. This roll may then be printed, by usual processes, on the blank part between the marginal strips.

After having at least the two aluminum strips glued upon the marginal edges thereof, the paper is rewound onto a core to form a roll to be used in the above-described printing operations. These rewound rolls of paper, having the printed or blank aluminum strips secured along both marginal edges thereof, and any other strips it may be desired to use, glued between the two marginal or border strips, form strengthened, ready to use rolls of blank paper containing preprinted advertisements or decoration, including neutral decorations.

To obtain a strengthened roll of paper, evenly wound on a core and which may be printed, on both sides thereof, it has been found that aluminum strips having a thickness of not more than 15 microns must be used. Most satisfactory results have been obtained using aluminum strips with a thickness of from 6 to 9 microns. Aluminum strips having a thickness of more than 15 microns present problems when the paper on which they have been directly attached is rewound on the core. The increased thickness of the aluminum causes irregularities in the rewound paper and also causes a roll of paper to be formed which is practically impossible to use. When rewound on the core to form ready-to-use rolls of newsprint, aluminum foil having a thickness of more than 15 microns causes the roll to have supported sturdy portions near the edges of the roll, where the strips of aluminum are piled one on top of the other, but which has a soft central portion

because of the lack of strips placed therein. Such a roll, having sturdy edge portions, which also bulge or protrude from the central soft portion of the roll, are difficult to handle, package, practically impossible to mount and therefore use on a conventional rotary printing press, and if mounted on such a rotary press would be subject to tearing in the softened central portion.

Experience has shown that a roll of newsprint must be hard throughout its length and not contain any softened areas such as are formed when aluminum strips having a thickness of over 15 microns are added along the marginal edge portions.

Also, with presently know printing process, it is impossible to print an advertisement or decoration on a band of aluminum strip having a thickness of less than 4 microns. Therefore, aluminum strips having a thickness of less than 4 microns cannot be presently used with the above-disclosed process.

In summary, applicant's strengthened roll of newsprint is prepared by gluing at least two foils of unbacked aluminum foil, having a thickness of between 4 microns and 15 microns, one along each marginal edge of a blank roll of newsprint and

rewinding the newsprint with the aluminum foils directly attached thereto onto a core for forming a roll for use in a rotary printing press.

Obviously numerous modifications and variations of the present invention are possible in the light of the above teachings. It is therefore understood that within the scope of the appended claims the invention may be practiced otherwise then as specifically described therein.

I claim:

1. A roll of newsprint having at least one aluminum metal foil strip glued adjacent to each marginal edge directly on said newsprint and extending continuously along the entire length of said newsprint on only one face thereof parallel to said marginal edge, said foil having a thickness of from 4 to 15 microns and said roll being blank except for said foil which is printed, preferably in at least one color, before its gluing onto said newsprint.

2. The roll of claim 1, wherein said foil has a thickness of from 6 to 9 microns.