

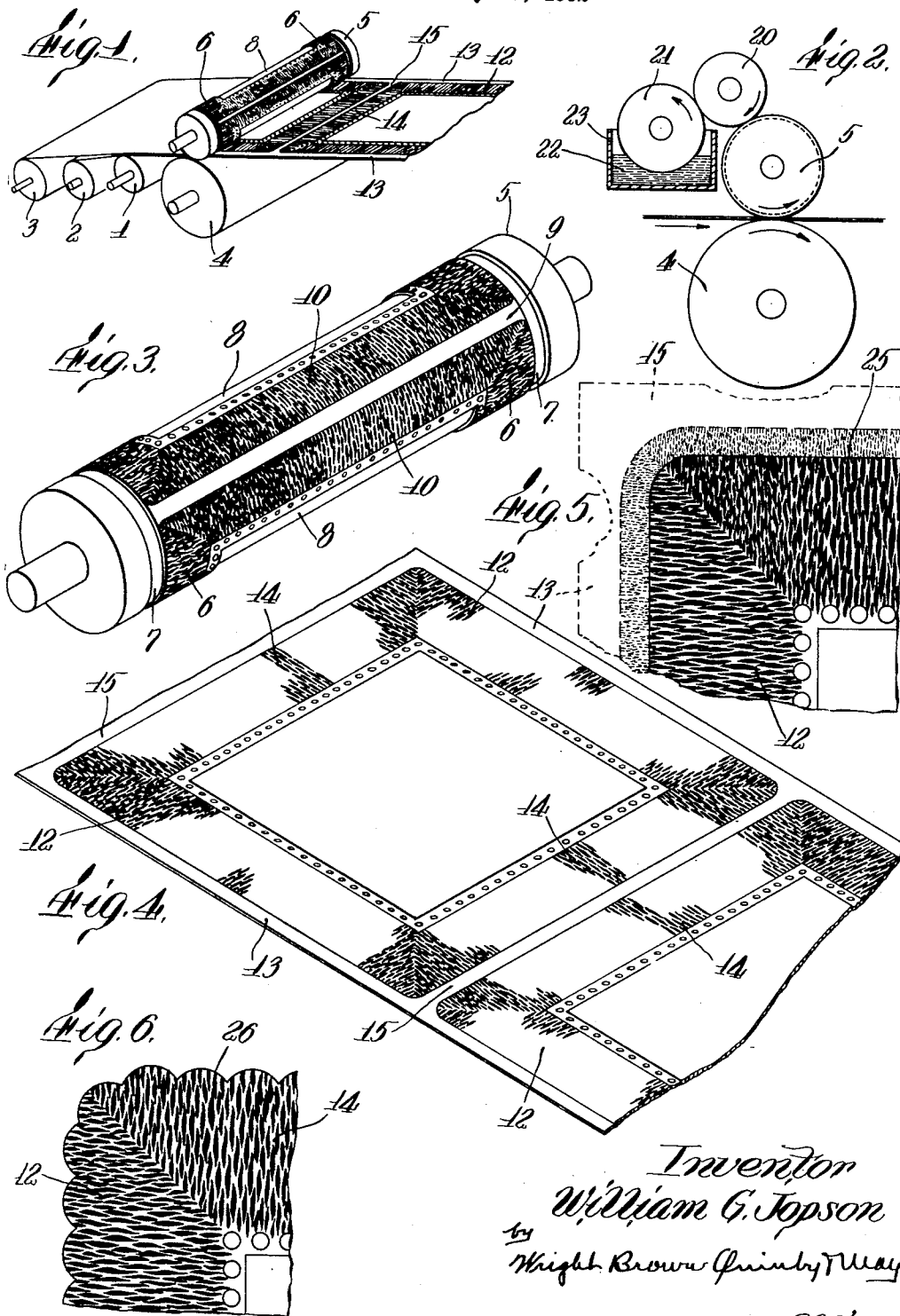
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PAPER ARTICLE AND METHOD OF MAKING IT

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PAPER ARTICLE AND METHOD OF
MAKING IT

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9 Claims. (Cl. 41—24)

This invention relates to paper articles, such, for example, as handkerchiefs, napkins, tray or table covers, or the like, where it is desired to produce a material of soft texture provided with an ornamental border. Such material may be made from a plurality of plies, usually two or three, but more might be used, of a light flimsy tissue which may, if desired, be slightly creped. These plies may be sufficiently bonded together by subjecting them to heavy pressure and this may be done by the use of embossing rolls which may impart the desired ornamental marginal effect as well as secure the plies together. It is found in practice, however, that if it be attempted to apply the pressure or embossing progressively, as by rolls, to the margins of such paper material, this can be done successfully only over a very narrow width as the rolling action rolls out and pushes the material ahead, forming a fullness or bias along the edge, and if the rolled portion is of any substantial width this interferes with the folding and cutting off operations of the machine. This relatively narrow margin such as can be produced by this method without too great interference with subsequent operations, however, does not produce an ornamental border of sufficient width for satisfactory results.

The present invention has for an object, therefore, to satisfactorily produce a paper article of this description, provided with an ornamental border within which the plies are secured together of a desirable width, and further to produce a border more highly decorative than can be produced by the marginal rolling operations heretofore practiced.

A further object is to provide a method by which embossed printing may be employed, this making possible further desirable ornamentation.

To accomplish these and other objects the material according to this invention is pressed or embossed progressively along relatively wide zones somewhat inwardly of the side margins of the material, these unpressed or unembossed margins holding the material against marginal fullness or spreading and permitting any desired embossing or printing within the treated zones. The material so treated may then be run through the folding and cutting mechanisms without interference from the treated portions, and at any desirable time in the manufacture, the unpressed or unembossed margins may be cut-off. The cutting off of these margins permits the pressed or embossed part to

spread out, giving a very decorative effect and fullness not obtainable by rolling the plies together along a free margin.

For a more complete understanding of this invention, reference may be had to the accompanying drawing in which

Figure 1 is a diagrammatic perspective showing the manner of embossing or impressing the material.

Figure 2 is a diagrammatic view illustrating the application of embossed printing.

Figure 3 is a perspective of an embossing roll.

Figure 4 is a perspective showing the sheet of material as it passes from the embossing or pressing mechanism.

Figures 5 and 6 are fragmentary elevations of individual articles showing different edge contours.

Referring to the drawing, at 1, 2 and 3 are shown supply rolls of thin cellulose tissue which are so mounted as to lead the sheet material off therefrom in strip form in superposed layers or laminations. At 4 is shown a platen roll between which and an embossing or pressure roll 5 these layers pass. As shown best in Figure 3, the roll 5 may have, adjacent to its ends, portions 6 of substantial width suitably engraved in accordance with any desired pattern to produce embossing, the surface portions of this roll being relieved about the periphery of the roll outwardly of these zones as at 7 and inwardly of these zones over the greater portion of its circumference at 8. The roll surface is also relieved along a relatively narrow zone 9, which extends between engraved embossing portions 10, these extending lengthwise of the roll and forming with the portions 6 the active embossing portions of the roll. The material as thus passed between the rolls 4 and 5 is pressed or embossed along relatively wide portions 12 (see Figure 4) inwardly of unpressed or unembossed marginal portions 13, these portions 12 being joined by crosswise embossed zones 14 to form panels spaced by unpressed or unembossed laterally extending zones 15.

If desired also embossed printing may be applied to the sheets as illustrated diagrammatically in Figure 2, the ink being supplied to the roll 5 as by means of the rolls 20 and 21, the latter of which dips within a supply of ink 22 in a receptacle 23. The embossing or pressing of the paper laminations together along the zones 12 and 14 serves to unite the plies together, but the progressive application of the pressure is prevented from spreading the material lengthwise

because of the unpressed or unembossed margins 13 which hold the sheets as a whole in their original lengthwise conditions of stretch and permit the strips thus assembled to be passed through any suitable folding and cutting off mechanism by which the several paneled portions are folded and severed one from the other.

After the folding and separation of the paneled portions from each other, or at any other suitable time in the manufacturing operation, depending on the particular article desired and the operations to which it is to be later subjected, the unembossed or untreated marginal portions 13 and cross zones 15, which after the panels are severed also become untreated unembossed margins, are cut away. The cuts are preferably somewhat inwardly of the outer edges of the embossed portions to insure the complete removal of the unembossed margins without requiring the exercise of any great care or skill to that end. This cutting away may be done by straight cuts, as shown at 25 in Figure 5, or in any suitable pattern formation, such, for example, as scallops shown at 26 in Figure 6, but whatever the particular configuration of the cuts, it acts to free the outer edges of the embossed zones so that the material therein is permitted to spread and assume a decorative effect which it is not possible to produce by progressively embossing or rolling the extreme marginal portions of superposed sheets of this thin material. Moreover, by performing the embossing inwardly of the side margins of the material, embossing may be produced throughout any desired width of zone to produce the desired width of border on the finished article. By the use of embossed printing also highly desirable color effects may be produced on the article. The material as it is being embossed being held against forward rolling takes the embossed printing accurately so that this type of ornamentation may be successfully employed when embossing is done in accordance with the method of this invention. Of course the panels might be other than rectangular in shape if desired.

From the foregoing description of the method, a mechanism by which it may be carried out, and the articles which may be produced thereby, which has been given merely by way of illustration, it should be evident that many changes and modifications might be made without departing from the spirit or scope of this invention as defined by the appended claims.

- I claim:

1. The method which comprises pressing together superposed laminations of thin cellulose tissue along zones inwardly of their margins,

which margins remain unpressed, and thereafter cutting off said entire unpressed margins.

2. The method which comprises embossing together superposed laminations of thin cellulose tissue along zones inwardly of their margins, which margins remain unembossed, and thereafter cutting off said entire unembossed margins.

3. The method which comprises progressively embossing together superposed laminations of thin cellulose tissue along zones inwardly of their margins, which margins remain unembossed, and thereafter cutting off said entire unembossed margins.

4. The method which comprises progressively embossing together and embossed printing superposed laminations of thin cellulose tissue along zones inwardly of their margins, which margins remain unembossed, and thereafter cutting off said entire unembossed margins.

5. The method which comprises progressively embossing together superposed strips of thin cellulose tissue in panel formation, each panel being defined by embossed outlines, the embossing of each panel being spaced inwardly of the side edges of the strip to leave the side margins unembossed, folding and cutting off the panel portions from each other, and then cutting away the entire unembossed margins of the panels.

6. The method which comprises progressively embossing together superposed strips of thin cellulose tissue in panel formation, each panel being defined by embossed outlines, the embossing of each panel being spaced inwardly of the side edges of the strip to leave the side margins unembossed and adjacent panels being spaced by unembossed portions, folding and cutting off the panel portions from each other, and then cutting away the entire unembossed margins of the panels.

7. An article comprising a plurality of superposed laminations of thin cellulose tissue united by embossing and decorated by embossed color printing.

8. An article comprising a plurality of superposed laminations of thin cellulose tissue united by embossing around their peripheries and decorated by embossed color printing.

9. The method which comprises embossing together superposed laminations of thin cellulose tissue along zones inwardly of said margins, which margins remain unembossed, and thereafter cutting off said entire margins by cuts positioned inwardly of the outer edges of said embossed zones.

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