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W. P. McCORKINDALE

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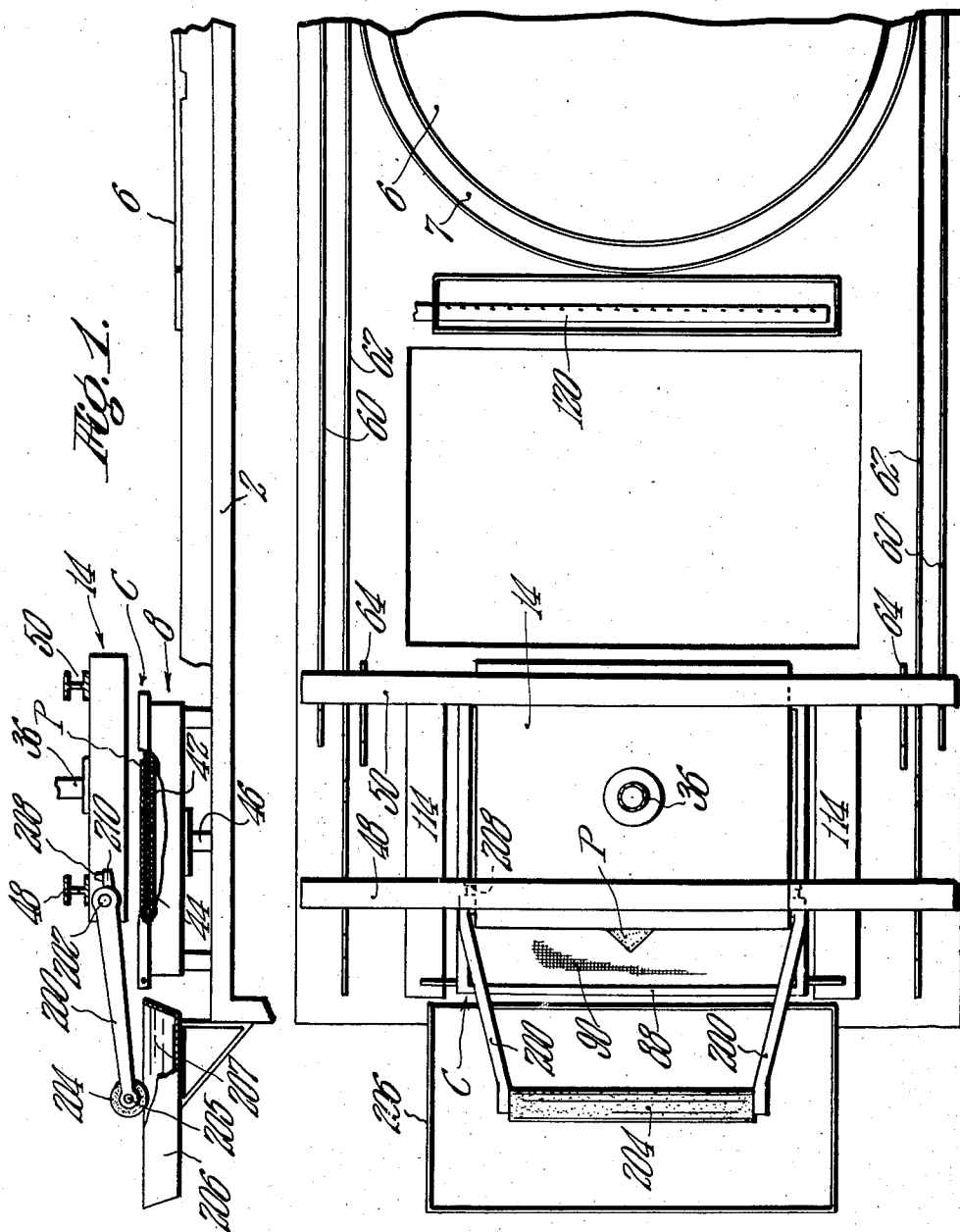


Fig. 2.

INVENTOR.

William P. McCorkindale.

BY

Walter C. Row.

ATTORNEY.

UNITED STATES PATENT OFFICE

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PAPER-MAKING

William P. McCorkindale, South Hadley Falls,
Mass., assignor to The McCorkindale Company,
Holyoke, Mass., a corporation of Massachusetts

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6 Claims. (Cl. 92-40)

This invention relates to improvements in the paper-making art and this application is a continuation in part of an application Serial No. 718,971, filed by me on April 4, 1934 now U. S. Patent No. 2,009,184 dated July 23, 1935.

The principal object of this invention is the provision of a novel apparatus and process for making paper which simulates hand-made paper; that is, paper having deckled edges, and according to special features of the invention the separate successive sheets are formed and have sizing material applied to the surface thereof.

In the application above-referred to there is disclosed an apparatus and method for making separate successive sheets of paper. To accomplish this, a paper-making member having a foraminous surface takes on paper-making material from a vat and this moves from said vat to a position over a carrier disposed on top of a receiving member and the paper formed on the paper-making member is transferred by suction onto the carrier.

According to this invention, sizing material is applied to a sheet of paper, as it is carried by the carrier. In some cases it is highly desirable to form the paper and then to size the same and the novel apparatus and method of this invention facilitate this sizing operation without a separate sizing step which would necessitate separate handling of the formed sheets.

Various other novel features and advantages of the invention will be hereinafter more fully referred to in connection with the accompanying description of the present preferred form of the invention, reference being had to the accompanying drawing wherein:

Fig. 1 is a partial side elevational view showing certain parts of a paper-making apparatus, such as disclosed in my pending application, Serial No. 718,971, having the present inventions associated therewith; and

Fig. 2 is a plan view of the paper-making apparatus shown in Fig. 1.

Referring now to the drawing more in detail, the invention will be fully described.

In Figs. 1 and 2 there is shown parts of a paper-making apparatus, such as is disclosed in my application Serial No. 718,971, filed April 4, 1934, with which the present invention is concerned. The said parts will be herein described to facilitate a clear understanding of the features of the present invention.

As in the application referred to, a bed 2 of the machine supports a vat 6 adapted to contain

paper-making material and may be called a stuff vat. This receives a supply of material and a channel 7 therearound serves as an overflow for material flowing over the sides of the vat.

A receiving member 8 is located at the left-hand end of the bed or table 2 and, as in the application referred to, consists of a box-like or hollow member having on its upper side a perforated plate 42 over which there is a foraminous surface 44 which may be of wire, gauze, or the like.

Carriers, such as C, consisting of a frame 88 supporting a porous member 90 which may be of fabrics of various kinds, are adapted to overlie the foraminous surface of the receiving member 15 to receive paper indicated by P, which is formed on a paper-making member 14.

The paper-making member 14 is a box-like or hollow member having a foraminous surface like the receiving member 8 and it is carried by rails 20 48 and 50. These rails as in the application referred to have wheels for rolling on tracks 60, 62 and 64.

The paper-making member travels between positions over the vat 6 and over the receiving member 8. While it is over the vat 6, it is under the influence of suction by means of a conduit 36 suitably connected to a source of suction so that paper-making material is sucked onto its foraminous surface. As it travels to the left to overlie a carrier C on the receiving member 8, the receiving member is subjected to the action of suction by means of a conduit 46 connected to a source of suction so that the paper formed on the paper-making member is transferred onto a carrier such as C and then the paper-making member returns to its position over the vat for another paper-forming operation.

As it travels back and forth, successive sheets of paper are formed and deposited on successive carriers. Elevating bars 114 at opposite sides of the receiving member are moved up and down to elevate the member 14 and rails after the manner described in the before-mentioned application.

According to this invention, sizing is applied to the sheet of paper transferred from the forming member to the carrier. The novel apparatus of this invention accomplishes this and there results a novel method of making paper wherein a sheet is formed, transferred to a carrier, and then subjected to a sizing operation.

Lever 200 are associated with the paper-making member 14 as by being pivoted thereto at 202 and they carry a sizing applicator which may be in the form of a roll 204 pivoted therein at 205.

This roller 204 may be yieldable and formed from rubber or the like. When the paper-making member 14 is in a position over the receiving member 8 the applicator 204 takes on sizing material 207 from a vat 206, which may be disposed adjacent receiving member 8.

A stop or stops 208 are provided on the paper-forming member 14 against which a lug or lugs 210 associated with the levers 200 abut. These parts serve to limit the lowermost position of the applicator and yet the roll and levers may move upwardly so that the roll may ride over the paper and contact therewith to apply sizing material thereto as the member 14 moves away from the receiving member 8.

With the paper-forming member 14 in a position wherein the paper is transferred to a carrier on the receiving member 8, the applicator receives a supply of sizing material. Then when the paper-forming member moves from the receiving member to its position over the vat, the applicator rolls over the paper P on the carrier C and applies sizing thereto. In this way subsequent to the paper-forming operation and the transfer of the formed paper to a carrier the paper is sized to provide surface-sized separate sheets.

While I have described the invention in great detail and with respect to a preferred form thereof, it is not desired to be limited thereto since many changes and modifications may be made therein without departing from the spirit and scope of the invention. What it is desired to claim and secure by Letters Patent of the United States is:

1. A paper-making machine comprising in combination, a vat for paper-making material, a movable making member having a foraminous surface adapted to take on paper-making material from the vat to form a sheet, a receiving member adjacent said vat having a perforated surface, a movable carrier having a foraminous member for overlying said perforated surface of the receiving member, suction means associated with the lower side of said receiving member for taking a sheet of paper from said making member and depositing it on said carrier when it overlies said receiving member, and size-applying means associated with said movable making member, all adapted and arranged whereby size may be applied to a sheet of paper on said carrier as the making member moves away from said receiving member.

2. A paper-making machine comprising in combination, a vat for paper-making material, a movable making member having a foraminous surface adapted to take on paper-making material from the vat to form a sheet, a receiving member adjacent said vat having a perforated surface, a movable carrier having a foraminous member for overlying said perforated surface of the receiving member, suction means associated with the lower side of said receiving member for taking a sheet of paper from said making member and depositing it on said carrier when it overlies said receiving member, and size-applying means associated with said movable making member, said size-applying means including an applicator movable with said making member and a vat for a supply of sizing material disposed to receive the applicator when the making member is in a certain position, all adapted and arranged whereby size may be applied to a sheet of paper on said carrier as the making member moves away from said receiving member.

3. A paper-making machine comprising in combination, a vat for paper-making material, a receiving member having a foraminous surface and adapted to be subjected to the influence of suction, a carrier for overlying the foraminous surface of the receiving member adapted to take on a sheet of paper, a making member having a foraminous surface adapted to move between said vat and said receiving member and to take on paper-making material from the vat to form a sheet, and size applying means associated with said member adapted to apply size to a sheet of paper on said carrier as the member moves away from said receiving member.

4. A paper-making machine comprising in combination, a vat for paper-making material, a receiving member having a foraminous surface and adapted to be subjected to the influence of suction, a carrier for overlying the foraminous surface of the receiving member adapted to take on a sheet of paper, a making member having a foraminous surface adapted to move between said vat and said receiving member and to take on paper-making material from the vat to form a sheet, and size applying means associated with said member adapted to apply size to a sheet of paper on said carrier as the member moves away from said receiving member, the said size applying means including an applicator movable with said making member and a vat for a supply of sizing material disposed to receive the applicator when the member is in a certain position.

5. A paper-making machine comprising in combination, a vat for paper-making material, a receiving member having a foraminous surface and adapted to be subjected to the influence of suction, a carrier for overlying the foraminous surface of the receiving member adapted to take on a sheet of paper, a making member having a foraminous surface adapted to move between said vat and said receiving member and to take on paper-making material from the vat to form a sheet, and size applying means associated with said member adapted to apply size to a sheet of paper on said carrier as the member moves away from said receiving member, the said size applying means including a roll movable relative to said making member and carried thereby, and a vat for sizing material adjacent the receiving member whereby when the making member is over the receiving member the roll may enter said vat and when the making member moves away from the receiving member the roll passes over paper on said carrier.

6. A paper-making machine comprising in combination, a vat for paper-making material, a receiving member having a foraminous surface and adapted to be subjected to the influence of suction, a carrier for overlying the foraminous surface of the receiving member adapted to take on a sheet of paper, a making member having a foraminous surface adapted to move between said vat and said receiving member and to take on paper-making material from the vat to form a sheet, and size applying means associated with said member adapted to apply size to a sheet of paper on said carrier as the member moves away from said receiving member, the said size applying means including a vat for sizing material, levers pivoted on the making member and a roll carried thereby adapted to enter said vat and to engage paper on said carrier during movements of the making member.