Sept. 11, 1934. J. B. FLEMING 1,973,339

METHOD OF PRODUCING ORNAMENTAL BUILDING PAPER

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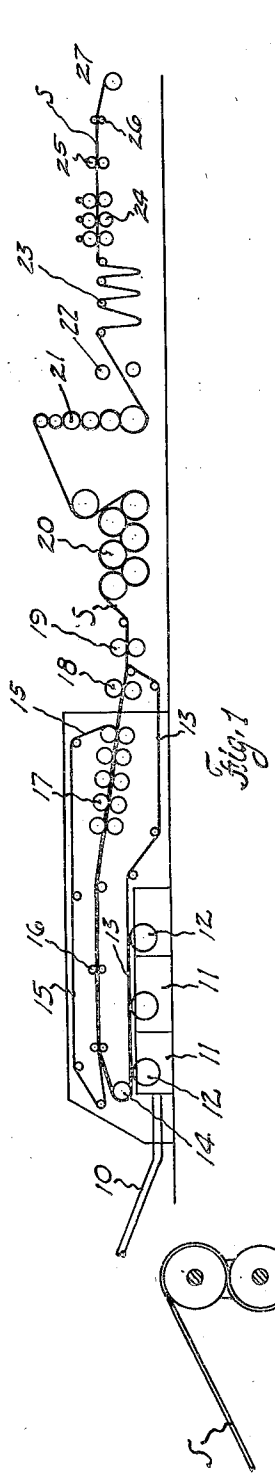


Fig. 1

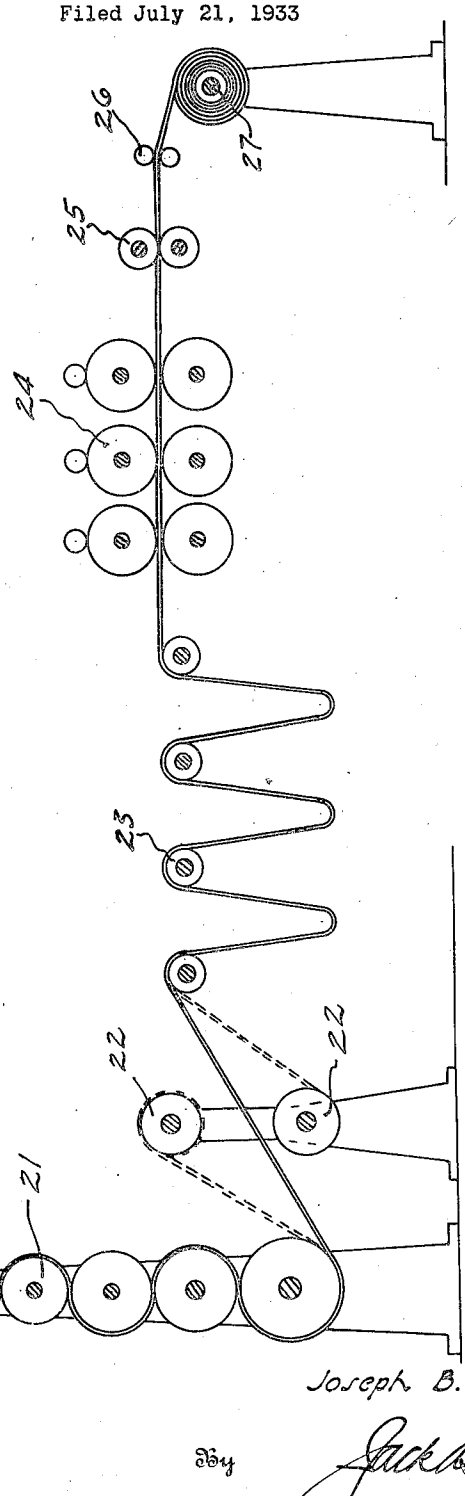


Fig. 2

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METHOD OF PRODUCING ORNAMENTAL BUILDING PAPER

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Application July 21, 1933, Serial No. 681,535

2 Claims. (Cl. 101—426)

This invention relates to new and useful improvements in methods of producing ornamental building paper.

It is customary to produce building paper having a general color or tint, such as light gray, light blue, or terra-cotta. The paper is colored in various ways, but usually by passing over a coloring roll in the calender stack.

One object of my invention is to print one surface of the paper, while it is being made, with conventional designs or figures in various colors, so that the paper when finally delivered and rolled will be produced with one surface so ornamented.

A further object of the invention is to provide a continuous method of producing building paper, including the step of printing one surface of the paper with colored figures or designs in various colors and in regular spaced order so that said paper may be cut into strips and used as a wall covering.

Still another object of the invention is to provide means between the drying rollers of the paper making machine and the printing rollers for looping the web of paper so as to assure a regular feed to the printing press, irrespective of interruptions in the paper making, and also whereby the press rollers are prevented from placing a tension upon the paper web in the paper making machine.

A construction designed to carry out the invention will be hereinafter described with other features of the invention.

The invention will be more readily understood from reading the following specification and by referring to the accompanying drawing, in which means for carrying out the method is diagrammatically illustrated and wherein:

Figure 1 is a diagrammatical side elevation of an apparatus for carrying out the method, and

Figure 2 is a diagrammatical view of the printing end of said apparatus.

In producing a building paper having an ornamental surface and which may be used as a wall covering, it is vitally important that the cost of manufacture be kept at a minimum. It is of course possible to place rolls of building paper in a printing press and print the same, but such rolls must be unwound and printed and then rewound. This additional handling would materially add to the cost, and also the problem of drying the printed surface to prevent it from sticking when rolled would present a problem. Further, the printing would have to be done after the paper had been trimmed and this would necessitate more exact and careful handling.

By printing on the surface of the paper, as a step in its manufacture, a more economical method is had. The paper will be more or less hot, or warm, thus causing the printed surface to dry more rapidly. By printing the surface before the trimming is performed, less care is required in running the paper.

In the drawing the numeral 10 designates the pipe by which the pulp is fed to the vats 11. The pulp is picked up by the cylinder molds 12 in the usual manner, whereby the fibre is strained from the water. The molds deposit the wet stock on the felt conveyor 13, whereby it is spread in a layer. Each mold adds a layer and thus the paper is given its thickness. For the purpose of illustration, only three molds have been shown in Figure 1, but any number may be used, according to the thickness desired.

The wet paper on the underside of the felt conveyor 13 is carried around a strain roller 14 and meets an upper felt conveyor 15, whereby the paper web S is gently squeezed between the conveyors. The web is carried by these conveyors between pairs of pressure rollers 16, which further squeeze out the water. The conveyors next carry the paper through press rollers 17, whereby the paper web is further squeezed and moisture extracted. No effort will be made to describe the details and the method of manufacture will be set forth only in a general way, because variations prevail in different plants.

The lower conveyor 13 continues beyond the rollers 17 and the upper conveyor 15 and carries the web through additional pressure rollers 18. By this time the web is self-supporting and passes off of the lower conveyor between a second set of pressure rollers 19. The web S is next carried through the dryer 20. From the dryer, the web passes to the calender rolls 21. It is customary to include in the calender stack a color roll, whereby the web of paper may be given its background color or tint.

In some plants the web is wound on reels 22 after passing through the calender rolls; however, the web may be taken from the bottom of the calender rolls and passed through a looper 23. The purpose of the looper is to provide a considerable slack in the web so that there will be no interruption in the continuity of the process, should the printing be stopped or some interruption occur in the making process. The looper permits the press to be shut down to change forms or ink without interrupting the

manufacture of the paper. From the looper, the web is carried between printing rolls 24, whereby the conventional figures or designs are printed upon the upper surface of said web. After the printing operation the web is carried between rolling cutters 25, whereby it is trimmed, or slit, in accordance with the particular width of paper being made. The web next passes between guide rollers 26 and is finally wound in its finished roll on a core 27. When the roll reaches the desired size, the web is cut and another roll is started in the usual manner.

Where the reels 22 are used, the web is wound on the upper reel, as is shown by dotted lines, and the roll thus formed is transferred to the lower reel. The web is then unwound from the lower reel and run through the looper to the printing press. It is obvious that ornamented building paper may be produced economically and rapidly by this method. The step of printing on the surface of the freshly made paper is very important, because the condition of the paper makes it more susceptible to printing and reduces the cost of manufacture.

It is pointed out that because of the use of the looper 23, intermittent shut downs at either end of the process will not interfere with the production of the printed paper. Where the reels are used, it will not be necessary to use the looper. However, it is preferable to use the looper and not use the reels. Of course, if the paper was running smoothly without interruptions, the looper would not be needed. This method is particularly adapted to produce the ornamental building paper covered in my copending application filed July 21, 1933, Serial No. 681,535.

What I claim and desire to secure by Letters Patent, is:

1. That method of continuously making ornamental building paper which consists, in molding a web of paper, then running said web between pressure rollers to extract surplus water, then carrying said web between drying rollers, then running said web around calender rollers, then looping said web to provide slack therein, then printing one surface of said web with colored designs, and rolling said web.

2. That method of continuously making ornamental building paper which consists, in molding a web of paper, then running said web between pressure rollers to extract surplus water, then carrying said web between drying rollers, then running said web around calender rollers, then looping said web to provide slack therein, then printing one surface of said web with colored designs, then trimming said web, and then winding said web in finished rolls.

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