April 1, 1930. W. K. TROTMAN 1,752,311

DANDY ROLL

Filed March 30, 1929

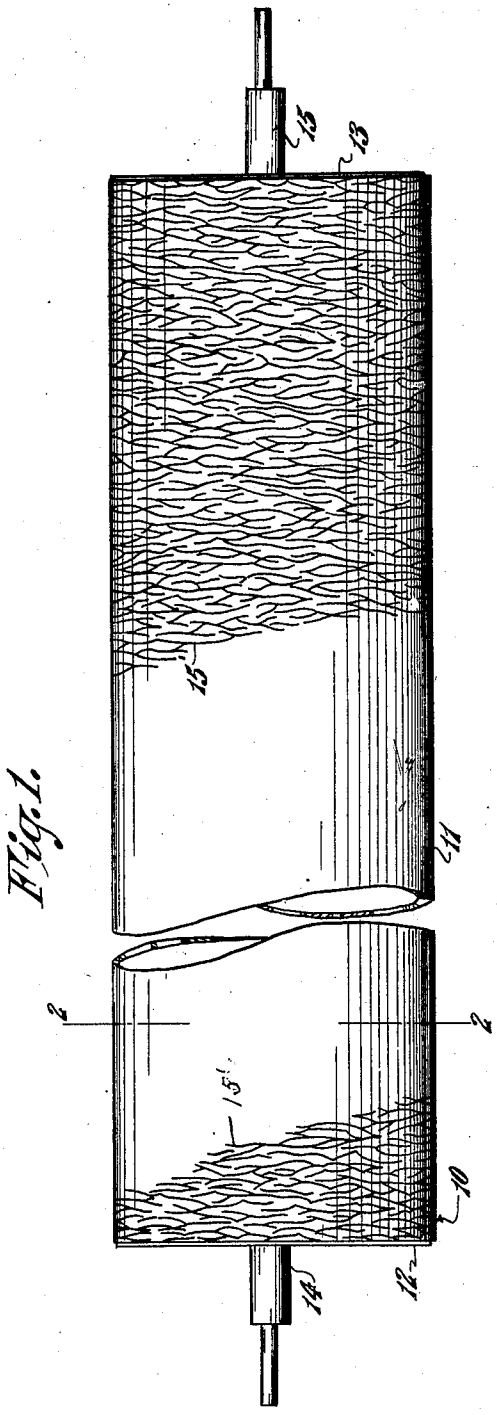


Fig. 1.

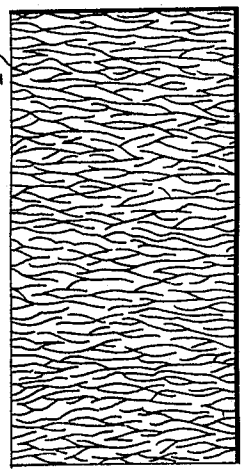


Fig. 4.



Fig. 3.

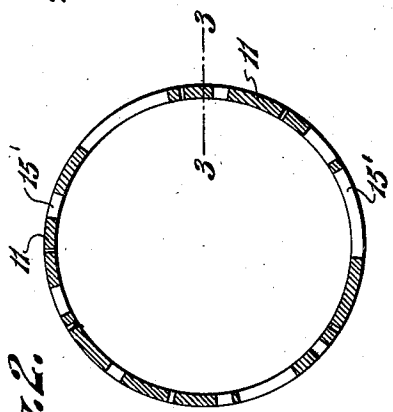


Fig. 2.

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UNITED STATES PATENT OFFICE

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DANDY ROLL

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This invention relates to a method of and an apparatus for water-marking paper, and particularly to a method of an apparatus for imparting to the paper an appearance simulating a fabric, thereby improving the appearance of the paper, without altering the quality of the same. Toward this end, this invention contemplates the provision of a dandy roll having a cylindrical surface in which there are formed or cut a series of irregular wavy slots of such irregularity that they leave upon the paper contacting with the roll impressions which, when viewed collectively, simulate a fabric material.

Comparative ease of operation and consequent inexpense of manufacture of the paper, or further desirable features have been borne in mind in the production and development of the invention.

In the accompanying sheet of drawings, forming a part of this specification, one embodiment of the invention is shown, and in these drawings:

Fig. 1 is a side view of a dandy roll, embodying the principles of the invention.

Fig. 2 is a sectional view taken substantially along the line 2—2 of Fig. 1.

Fig. 3 is a sectional view taken substantially along the line 3—3 of Fig. 2, and

Fig. 4 is a plan view of a piece of paper representing the finished product and showing the water-mark simulating a fabric appearance.

In all of the above mentioned views, like characters of reference are employed to designate like parts throughout and a dandy roll is designated at 10. This roll is cylindrical in shape and comprises a shell 11 in form of a hollow cylinder. While this shell may be formed in any suitable manner and of any suitable material, it is preferable to form the same of some soft material, such as brass, aluminum or the like, on account of the ductility of these materials. The shell is supported upon end plates 12 and 13, which in turn are carried by hubs 14 and 15 adapted to rotate the shell.

Formed in the surface of the shell 11 are a plurality of wave-like slots 15′. These slots may be formed in any suitable manner, as for example, by cutting or by electrotyping, or the like. However, irrespective of these details in manufacturing, the essential features of the invention are always preserved.

It is obvious that, in forming the slots 15′, care must be taken, so that no series of slots will define a closed area, so that continuity of metal will occur throughout the cylindrical shell. The slots run substantially in a direction around the perimeter of the shell, so that when they are viewed collectively, they present to the eye an appearance resembling a fabric material.

In actual operation, the wet pulp, from which the paper is formed, is passed beneath the rotating dandy roll and, as the roll contacts with the pulp, water passes inwardly through the slots and an impression or water-mark is formed in the paper corresponding to the shape of slots. Consequently, as the paper, which is shown at P in Fig. 4, emerges from the roll, a series of sharply defined impressions are left upon the same and these impressions impart to the paper the appearance of a fabric, thereby improving the appearance of the paper by simulating a paper of high quality, irrespective of the actual quality of the material used.

What I claim is:—

1. As an article of manufacture, a dandy roll in the form of a hollow cylinder, there being a plurality of wave-like slots in said cylinder, said slots extending substantially in the same direction, so as to simulate, when viewed collectively, a threadlike fabric appearance.

2. As an article of manufacture, a dandy roll comprising a hollow cylinder formed of thin sheet metal, said cylinder having cut therein a plurality of minute wave-like slots, extending substantially in a direction around the cylinder, said slots, when viewed collectively, presenting a threadlike appearance.

WALTER K. TROTMAN.